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FM 17-15

DEPARTMENT OF THE ARMY FIELD MANUAL

TANK UNITS

PLATOON, COMPANY AND BATTALION

WITHDRAWN
FROM U.S. MILITARY ACADEMY
USE ONLY

HEADQUARTERS, DEPARTMENT OF THE ARMY

DECEMBER 1961

AGO 2546B

FIELD MANUAL

TANK UNITS, PLATOON, COMPANY AND BATTALION

CHANGE
No. 1

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., *23 April, 1964*

FM 17–15, 4 December 1961, is changed as follows:

Delete all references to Davy Crockett weapons and Davy Crockett sections.

Substitute **combat service support** for administrative support.

Substitute **battalion heavy mortar platoon** for battalion mortar platoon.

Substitute **battalion reconnaissance platoon** for armored cavalry platoon.

Substitute **heavy mortar squad** for mortar squad.

Substitute **mechanized infantry (unit)** for mechanized (unit).

Substitute **reserve** for striking force.

Substitute **shock effect** for shock action.

CHAPTER 1
(Superseded)
GENERAL

Section I. GENERAL

1. Purpose

This manual sets forth doctrine for the employment of tank platoons, companies, and battalions.

2. Scope

a. This manual provides information on the organization, capabilities, limitations, tactics ,techniques of employment, exercise of command, reconnaissance and security, combat service support and logistics, and tactical operations appropriate to all tank battalions and their subordinate elements.

b. The procedures described herein are intended as guides only and should be considered flexible. Each new situation in combat must be solved by an intelligent interpretation and application of the doctrine set forth herein.

c. This manual should be used in conjunction with FM 17–1, FM 17–30, FM 54–2, FM 61–100. General information contained in FM 17–1 and FM 17–30 is repeated in this manual only when necessary to insure clarity and understanding. Although this manual deals primarily with tank units, it emphasizes that tanks normally operate in close coordination with infantry and other arms in mobile combined arms forces. Other manuals which supplement the information in this manual and with which tank unit commanders should be familiar are listed in appendix I.

d. The term "tank" is the approved generic term with respect to tank unit; i.e., tank platoon, tank company, and tank battalion.

e. Chapters 1 through 11 apply primarily to the tank battalion of the armored, mechanized infantry, and infantry divisions.

f. Unless otherwise specified, the material presented herein is applicable without modification to both nuclear and nonnuclear warfare.

g. Users of this manual are encouraged to recommend changes or comments to improve its contents. Comments should be keyed to the specific page, paargraph, and line of the text in which

change is recommended. Reasons should be provided for each comment to insure understanding and complete evaluation. Comments should be forwarded direct to U.S. Army Combat Developments Command Armor Agency, Fort Knox, Kentucky.

3. General

Technological developments and doctrinal and organizational concepts indicate that increased emphasis will be placed on tactical operations characterized by open and fluid warfare, with increased dispersion between tactical formations and installations. The decisive element of these operations will be the rapid concentration of the combat power required to achieve a tactical advantage. Upon the accomplishment of a mission, immediate dispersion of this combat power will be necessary to avoid enemy nuclear retaliation. Tank units are designed for the conduct of mounted mobile warfare. Their capabilities have assumed increased importance within the role that ground forces will play on the battlefield.

4. The Tank Battalion in the Armored Division or Separate Armored Brigade

The tank battalions constitute the primary combat force and heavy direct firepower of the armored division and separate armored brigade. Other organizations of the division or separate armored brigade have the basic function of supporting and complementing the tank battalion. The battalion is normally attached to a brigade and employed in coordination with other combat and combat support elements as a mobile combined arms force in offensive, defensive, and retrograde operations.

5. The Tank Battalion in the Mechanized Infantry Division or Separate Mechanized Infantry Brigade

The tank battalions of the mechanized infantry division and separate mechanized infantry brigade are employed in roles that take maximum advantage of the battalions' firepower, armor protection, and mobility consistent with the division or separate brigade mission. One or more tank battalions normally are used to support the main attack force in offensive operations and are employed as part of the division or separate brigade reserve in other offensive or defensive operations. The tank battalion reinforces the mechanized infantry elements of the brigades, thereby adding to the firepower of the brigades and depth to antitank defense.

6. The Tank Battalion in the Infantry Division or Separate Infantry Brigade

The tank battalions of the infantry division and separate infantry brigade are used in roles that take maximum advantage of the battalions' firepower, armor protection, and mobility consistent with the division or separate brigade mission. They may be employed as the nucleus of the brigade or division reserve, or to reinforce infantry units in both offensive and defensive operations. The tank battalion increases the strength and firepower of the attack and counterattack, and adds depth to the antitank defense in both the offense and defense.

7. The Airborne Division Tank Battalion

The airborne division tank battalion is used in roles that take maximum advantage of the battalions' firepower, limited armor protection, and mobility consistent with the division mission. It may be employed as the nucleus of the brigade or division reserve, or to reinforce infantry units in both offensive and defensive operations. The tank battalion increases the strength and firepower of the attack and counterattack, and adds depth to the antitank defense in both the offense and defense.

8. Tailoring of Forces

The fundamental concept of organization for combat of armor units is based upon the formation of mobile combined arms battalion task forces especially tailored for specific tactical missions. The nucleus of such a force is the combat maneuver battalion. Around this nucleus a force is formed which normally consists of tanks and mechanized infantry, supported by artillery and engineers, in the proportion best suited for the mission. Additional elements—combat, combat support, or combat service support—can be added as necessary. These combined arms forces are not rigid; after commitment, their composition may be quickly adjusted to meet the requirements of a changing situation. The keynote of this concept is flexibility so that a force of the proper size and composition can easily and quickly be formed for the accomplishment of the mission at hand. Within the battalion task force, company teams are formed by cross-attachment of platoons.

9. The Tank

a. The tank is a vehicle-mounted weapons system designed to

execute mounted, mobile operations in the offense, defense, or retrograde. With its armor-protected firepower and excellent cross-country mobility, the tank is ideally suited for employment in all types of offensive operations, in execution of the mobile defense, in covering force and retrograde operations, and as part of a counterattacking force in the area defense.

b. The tank is a weapon of decision on the battlefield. The ease with which the tank can move cross-country over difficult terrain enables the crew, protected by armor, to maneuver its mounted weapons system from one favorable position to another, influencing the course of an operation in the manner the commander desires. This fast, mobile, armor-protected vehicle is the primary weapon of the tank battalion.

10. The Tanker

The individual soldier in a tank unit must be indoctrinated with the spirit of the offensive. His thinking must be geared to the speed and violence of mobile warfare. He is trained to operate deep in hostile territory .He must regard the presence of the enemy to his front, flanks, and rear as a condition to be expected. He must develop a spirit of daring that will insure effective engagement of the enemy.

11. Tank Crew Teamwork

a. The tank crew is a tightly integrated team. While all members have certain primary duties, it must be emphasized constantly—in training and in battle—that success depends upon their effectiveness as a crew. They must work together in the maintenance and servicing of their tank. They must function as one in combat and respond swiftly, automatically, and efficiently to each new situation.

b. The efficiency of the tank crew can be improved greatly by training each crew member in the duties of the other crew members to the maximum extent permitted by time and the capacity of the men. This training should be conducted as soon as the primary duties of each man are mastered.

12. Mission and Capabilities of the Tank Battalion (Armored, Mechanized Infantry or Infantry Divisions, and Separate Armored, Mechanized Infantry or Infantry Brigades)

a. Mission. The mission of the tank battalion is to close with and destroy enemy forces using fire, maneuver, and shock effect in coordination with other arms.

b. Capabilities. Tank units can—

(1) Conduct operations requiring a high degree of firepower, mobility, armor protection, and shock effect.

(2) Attack or counterattack under hostile fire.

(3) Destroy enemy armor by fire.

(4) Support mechanized infantry and infantry units by fire, maneuver, and shock effect.

(5) Exploit after breakthrough with high cross-country mobility.

(6) Rapidly exploit the effects of mass destruction weapons.

(7) Provide organic nonnuclear fire support.

(8) Conduct combat operations under limited visibility conditions employing night viewing devices and surveillance equipment.

(9) Participate in air-transported operations with reduced capabilities when the armored reconnaissance/airborne assault vehicle is substituted for the main battle tank.

13. Legend

Figure 1 shows the symbols most frequently used in illustrating this manual.

Section II. ORGANIZATION OF TANK BATTALION

14. General

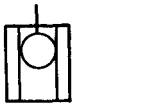
a. The tank battalion organization is the same in the armored, mechanized infantry or infantry divisions, and separate armored, mechanized infantry or infantry brigades.

b. The tank battalion consists of a headquarters and headquarters company, and three tank companies (fig. 2).

15. Headquarters and Headquarters Company

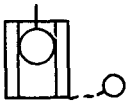
The battalion headquarters contains the battalion commander and his staff. The headquarters company contains a company headquarters, battalion headquarters section, battalion ground surveillance section, headquarters tank section, battalion communication platoon, battalion reconnaissance platoon, battalion heavy mortar platoon, battalion support platoon, battalion maintenance platoon, battalion medical platoon, and an armored vehicle launched bridge section (fig. 3). A chaplain section, personnel section, and air control team are provided by augmentation as required and when approved by Department of the Army.

LEGEND



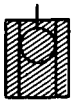
TANK PRIMARY POSITION

TANK ALTERNATE OR SUPPLEMENTARY POSITION



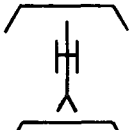
TANK OUTPOSTED BY DISMOUNTED CREW MEMBER

ARMORED PERSONNEL CARRIER

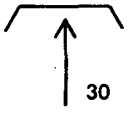


ENEMY TANK POSITION

ENEMY SELF-PROPELLED ANTITANK GUN



EMPLACED TOWED ANTITANK GUN



EMPLACED MACHINE GUN (Caliber .30)

AGGRESSOR

TYPICAL TANK

NOTE: ILLUSTRATIONS OF VEHICLES AND EQUIPMENT OTHER THAN PHOTOGRAPHS IN THIS MANUAL ARE ARTISTS DRAWINGS AND ARE NOT INTENDED TO INDICATE FUTURE DESIGN

Figure 1. (Superseded) *Symbols used in text.*

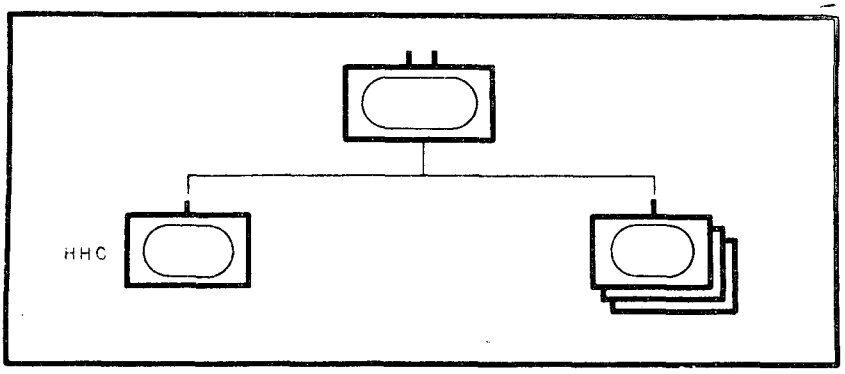


Figure 2. (Superseded) *Organization, tank battalion.*

16. Battalion Headquarters

The battalion headquarters contains the necessary officers and men to command, control, and supervise the training and operations of the battalion. These include the battalion commander, executive officer, personnel staff officer (S1), intelligence officer (S2), operations officer (S3), logistics officer (S4), communication officer, maintenance officer, and sergeant major. For duties and responsibilities of the battalion commander and his staff, see FM 17–1.

17. Company Headquarters of Headquarters Company

The company headquarters of headquarters company provides combat service support for the company and for battalion headquarters. The company headquarters section includes the company commander, executive officer, a warrant officer (automotive maintenance technician), first sergeant, motor sergeant, supply sergeant, company clerk, armorer, mechanics, mechanic helpers, and drivers. The company commander may be designated to assume temporarily the duties of any member of the staff. The warrant officer, automotive maintenance technician, is the company maintenance officer and, together with the motor sergeant and mechanics, is responsible for keeping all headquarters company vehicles and equipment at maximum operating efficiency.

18. Battalion Headquarters Section

a. The battalion headquarters section provides an S3 air, two liaison officers, and necessary enlisted personnel for operation of the battalion headquarters. This section provides signal operating personnel and vehicular mounted frequency-modulated (FM),

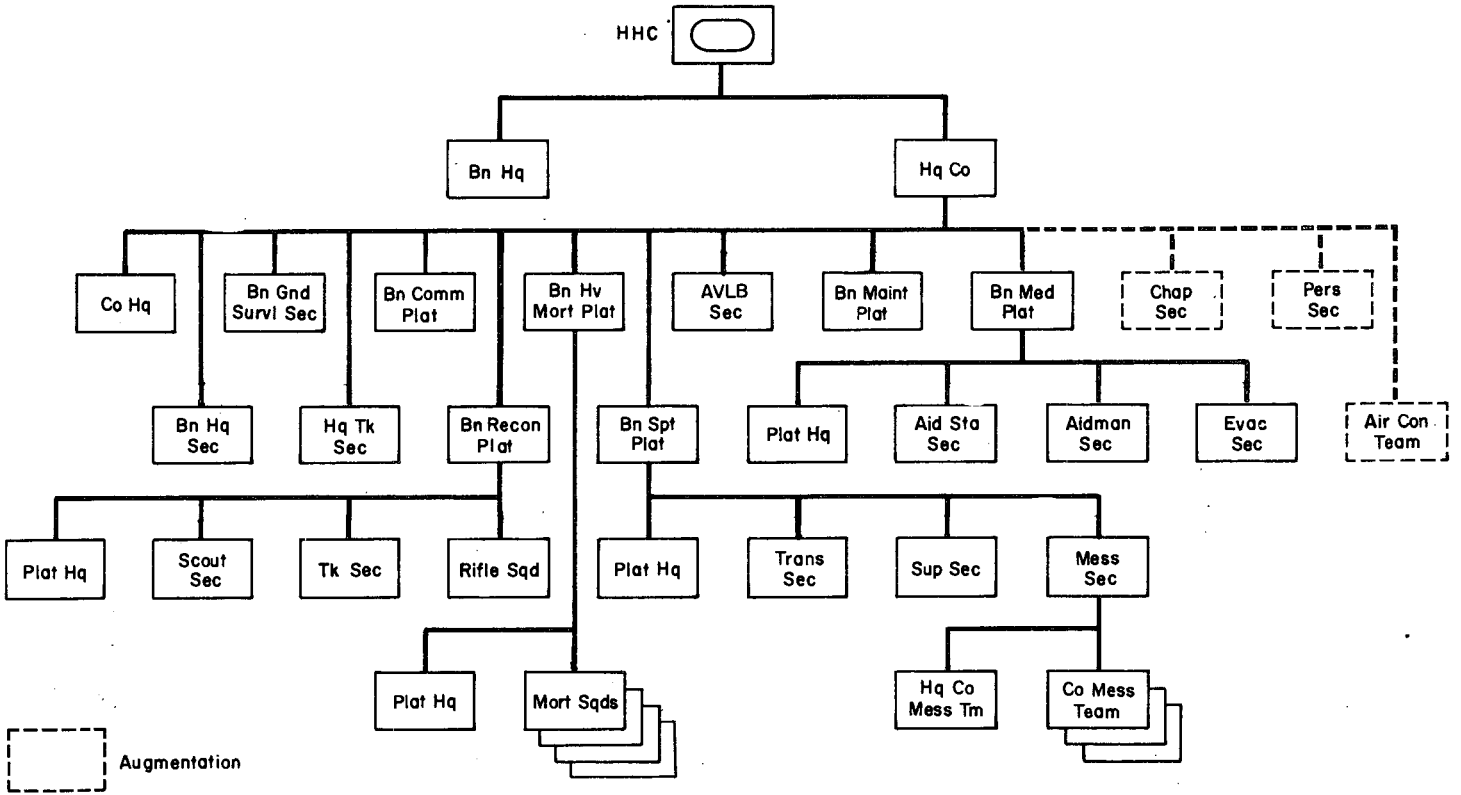


Figure 3. (Superseded) *Organization, headquarters and headquarters company, tank battalion.*

radioteletypewriter (RATT), and amplitude-modulated (AM) (both voice and CW) radio sets needed by the headquarters for the command and control of the battalion. Transportation includes armored personnel carriers and general purpose vehicles. In addition, other equipment required for operation of the headquarters is provided by this section.

b. The S3 air is the principal assistant to the S3. He is trained in the details of planning and requesting tactical air missions. Hs is also familiar with the execution of tactical air missions. In coordination with the fire support coordinator (FSCOOR), he prepares the air support portion of the fire support plan. He prepares and processes requests for immediate and preplanned close air support and assists the S2 by forwarding requests for tactical air reconnaissance. In the absence of a forward air controller (FAC) or when appropriate, he coordinates air-to-surface fires. The S3 air may be designated as the assistant S3 and will coordinate the activities in the operations center in the absence of the S3.

c. For duties of the liaison officers, see FM 101–5.

19. Headquarters Tank Section

The headquarters tank section consists of a section leader and the necessary enlisted men to man the three tanks with which the section is equipped. These tanks are provided primarily for the use of the battalion commander, operations officer (S3), and artillery liaison officer or forward air controller, and other staff officers as desired. When not otherwise used, tanks of this section may be employed for security of the command post.

20. Battalion Reconnaissance Platoon

a. General. The reconnaissance platoon (fig. 4) consists of a platoon headquarters, a scout section, a rifle squad, and a tank section. The platoon headquarters consists of a platoon leader and a scout driver. The scout section consists of two squads of six men each. The section leader commands one squad. The squad leader of the other squad is also the assistant section leader. The rifle squad consists of a squad leader, an armored personnel carrier driver, two fire team leaders, two automatic riflemen, two grenadiers, and three riflemen. One rifleman will be designated as machinegunner. The tank section consists of two light gun tanks commanded by the platoon sergeant and manned by seven crewmen.

b. Mission. The reconnaissance platoon performs reconnaissance

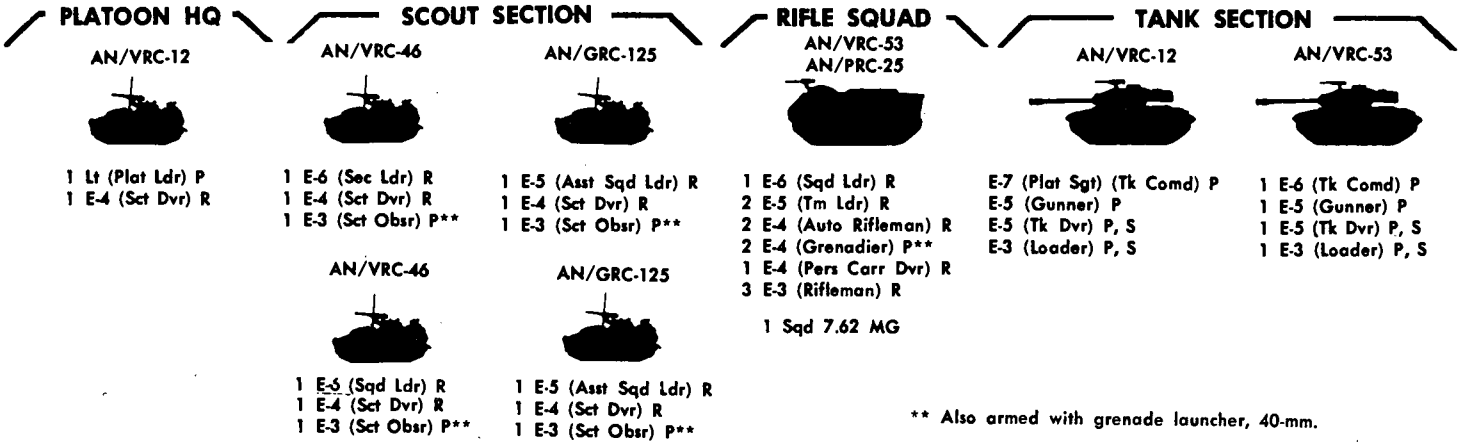


Figure 4. (Superseded) *Battalion reconnaissance platoon.*

and provides security for the battalion within its capabilities. It may be reinforced with additional tanks and mechanized infantry to accomplish these missions. The reconnaissance platoon assists in the control of movements of the battalion, or elements thereof, by performing route reconnaissance, posting guides and markers, and reconnoitering assembly areas and attack positions. For details of employment, see FM 17–36.

21. Battalion Heavy Mortar Platoon

a. General. The battalion heavy mortar platoon (fig. 5) consists of a platoon headquarters and four heavy mortar squads. The platoon headquarters consists of a platoon leader, platoon sergeant, three forward observer teams, and a fire direction center (FDC), each having its own transportation and communication facilities. Each heavy mortar squad contains a squad leader, a gunner, a mortar carrier driver, an assistant gunner, and an

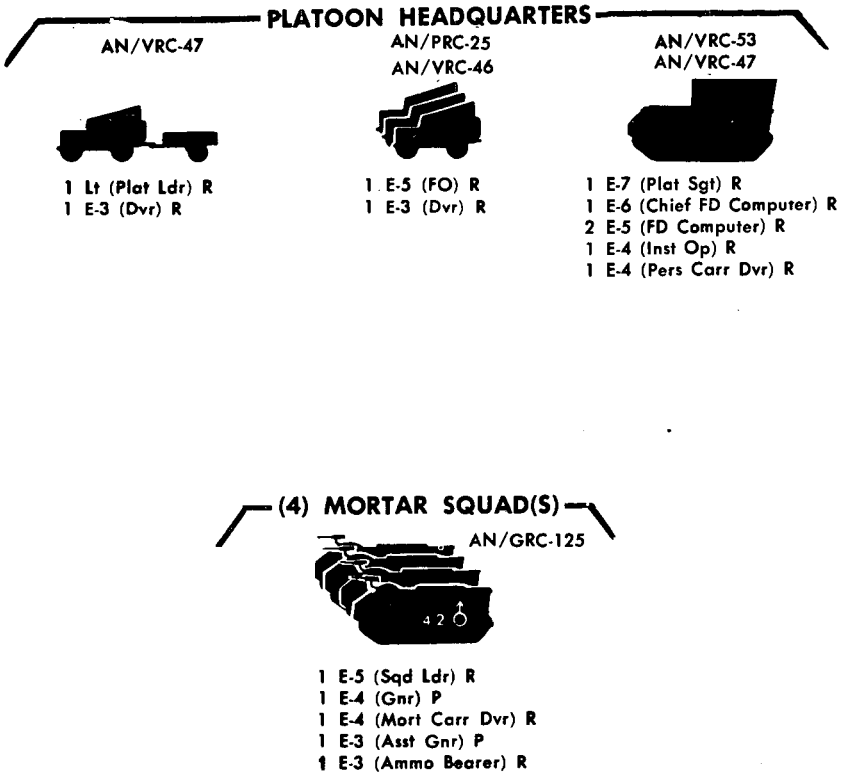


Figure 5. (Superseded) *Battalion heavy mortar platoon.*

ammunition bearer. The platoon depends upon its parent company and battalion for combat service support and, partially, for security.

b. Mission. The platoon provides close and continuous fire support for the companies of the tank battalion. Normally, the platoon is employed under battalion control. For details of tactical employment of this platoon, see appendix II.

22. Battalion Communication Platoon

The battalion communication platoon, commanded by the battalion communication officer, contains sufficient men, equipment, and organic transport to provide for the installation and maintenance of the battalion communication system. A radar mechanic is provided for maintenance of radar equipment. The communication chief supervises the activities of the platoon's message handling, wire, and maintenance personnel. The platoon is transported in an armored personnel carrier and in general purpose trucks.

23. Battalion Support Platoon

a. General. The support platoon is organized into a platoon headquarters, supply section, transportation section, and mess section. The S4 has primary staff interest in employment of the platoon. The platoon has personnel, vehicles, and equipment to furnish the transportation, mess, and supply support required by the battalion to sustain itself for limited periods of combat. Details of its operations are included in FM 17–1.

b. Platoon Headquarters. Platoon headquarters consists of a platoon leader and driver. During field operations, the platoon leader controls the battalion field trains. He has radio communication with the battalion S4 in the battalion administrative/logistical net or, in emergencies, in the battalion command net.

c. Transportation Section. The transportation section is organized and equipped with personnel and vehicles to provide general transport for the battalion. It provides the necessary vehicles to transport the parts of the battalion basic loads and prescribed loads that are carried in the battalion trains. In addition, it transports other supplies as required from supply points to the companies of the battalion. The transportation section leader will normally control the battalion combat trains.

d. Supply Section. The supply section operates under the control of the section leader (WO). Except for repair parts and medical expendables, the section receives and consolidates supply requests

from the companies, prepares all requisitions, and procures and issues supplies to the companies.

e. Mess Section. The headquarters company mess team and company mess teams operate under the control of the battalion mess steward. They are capable of providing a battalion consolidated mess, or of operating individually as company messes.

24. Battalion Medical Platoon

The medical platoon is organized into a platoon headquarters, an aid station section, an aidman section, and an evacuation section. The platoon establishes and operates the battalion aid station. All medical expendables are requisitioned and distributed as required by the platoon. It provides medical aid-evacuation teams and armored ambulance service to the companies for emergency medical treatment and evacuation of casualties to the battalion aid station. It assists in technical instruction in first aid and field sanitation, and conducts technical inspections of a medical and sanitation nature. The platoon leader is also the battalion surgeon. Details of operation of this platoon are contained in FM 8–15 and FM 17–1.

25. Battalion Maintenance Platoon

The battalion maintenance platoon performs that organizational maintenance outlined in the 20-series technical manuals which cannot be accomplished by company maintenance sections. (In performing organizational maintenance, company maintenance sections are limited in time available, tool authorizations, and availability of repair parts.) The platoon recovers and evacuates vehicles, and supplies all authorized repair parts (except signal and medical). This platoon is commanded by the battalion maintenance officer who is assisted by an automotive maintenance technician (WO). He has radio communication with the battalion S4 and unit maintenance sections in the battalion administrative/logistical net or, in emergency, in the battalion command net. Details of operation of the maintenance platoon are contained in FM 54–2 and FM 17–1.

26. Armored Vehicle Launched Bridge Section

The armored vehicle launched bridge (AVLB) section contains two armored vehicle bridge launchers, each capable of launching a class 60 assault bridge across a gap up to 60 feet wide in a relatively short time and with minimum exposure of the crew. The section is commanded by a section chief. The S3 has primary

staff interest in operations of the section. For details of employment, see chapter 6.

27. Battalion Ground Surveillance Section

The battalion ground surveillance section provides the battalion with medium and short range radar surveillance. The section consists of the section sergeant who commands the section, three team leaders, six senior radar operators, eight radar operators, and a light truck driver. A ¼-ton truck with driver is provided for the surveillance section sergeant. The remaining personnel and equipment are transported in armored personnel carriers. The S2 has primary staff interest in the operation of the section. See FM 17–1 for methods of employment.

28. Tank Company, Tank Battalion

a. General. The tank company (fig. 6) consists of a company headquarters, three tank platoons of five main battle tanks each, and a security section augmentation when approved by Department of the Army.

b. Tank Company Headquarters. The company headquarters contains a headquarters section and a maintenance section.

c. Headquarters Section.

(1) Key officers and men in the headquarters section include the company commander, executive officer, first sergeant, communication chief, and supply sergeant.

(*a*) The company commander is responsible for the employment, training, discipline, control, combat service support, and welfare of his company in garrison and combat. He actively supervises the performance of those under his command. He employs his unit in combat in accordance with orders received from higher headquarters. He positions himself in battle where he can best influence the outcome of the action. In the absence of orders, he makes decisions relative to the employment of his company in accordance with the overall mission and his estimate of the situation.

(*b*) The executive officer is second in command of the company. He keeps abreast of the tactical situation and must be prepared to assume command at any time. As the company commander's principal assistant, the executive officer supervises the functioning of combat service support elements. He handles most of the company administrative details so that the company com-

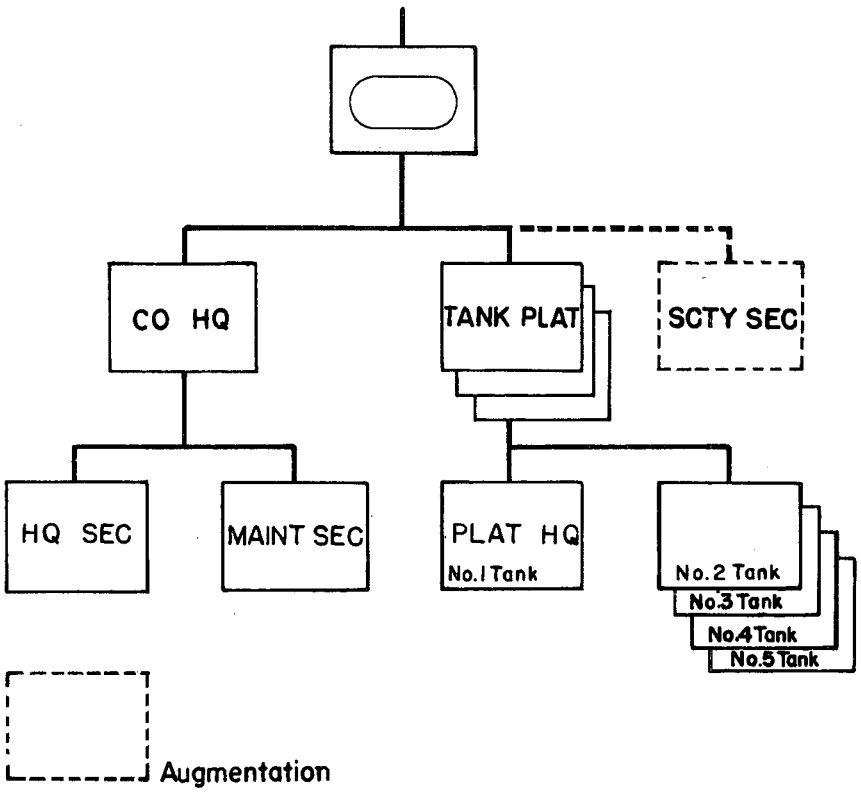


Figure 6. (Superseded) *Organization, tank company.*

mander can devote most of his time to operations, training, and discipline. The executive officer is responsible for the movement, security, and operation of the company command post. He insures that communication is maintained with the platoons, the company commander, and battalion headquarters. He is also the company maintenance officer and rides in the maintenance ¼-ton truck.

(2) The headquarters section has two tanks. One of these is used by the company commander; the other is normally used by the artillery forward observer.

(3) When contact with the enemy is not imminent, the company commander may ride in a ¼-ton truck organic to the company headquarters section. The remaining ¼-ton truck may be used by the first sergeant. It may also serve as a messenger vehicle.

d. Maintenance Section. The maintenance section provides organizational maintenance for the company that is outlined in the 20-series technical manuals. The section includes the company motor sergeant and radio, recovery, turret, and tracked vehicle mechanics. The extent of its operations is determined by the capabilities of its men and the time, tools, and repair parts available. Vehicles requiring extensive repairs that cannot be accomplished at company level are turned over to the battalion maintenance platoon. The motor sergeant supervises company organizational maintenance and is in charge of the company repair parts. Specific duties of the motor sergeant are contained in FM 38–5. For recovery and evacuation of vehicles, see FM 17–1.

e. Security Section. The security section is provided by augmentation which must be approved by Department of the Army. The section consists of a section leader, eight security guards, and a driver for the armored personnel carrier in which the section is transported. The mission of this section is to form a security force for the protection of company headquarters and to provide replacement tank crewmen. When not immediately required for their primary mission, members of this section may be used to assist personnel in the maintenance section.

29. Tank Platoon

a. General. The tank platoon consists of five main battle tanks, including the platoon leader's tank. The platoon operates as a unit; however, the enemy situation, terrain, or platoon mission may require the platoon leader to employ his platoon in two ele-

ments to facilitate control. The platoon leader will retain command and responsibility for the entire platoon. Tanks are numbered 1 through 5. Prefixes or suffixes may be used in conjunction with tank numbers as prescribed in organizational SOI and SSI.

b. Duties.

(1) *Platoon leader.* The platoon leader is responsible to the company commander for the discipline and training of his platoon, the maintenance of its equipment, and its success in battle.

(2) *Platoon sergeant.* The platoon sergeant is second in command of the platoon and is responsible to the platoon leader for the conduct of the platoon.

(3) *Tank commander.* The tank commander directs the movement of the tank, the laying and firing of all tank weapons, the maintenance and supply of the tank, and initial first aid treatment and evacuation of wounded crewmembers from the vehicle. He aims and fires the .50 caliber machinegun. He is responsible to the platoon leader for the tactical employment of the tank and the training and discipline of the crew.

(4) *Driver.* The tank driver is capable of driving over varied terrain, and of positioning and stopping the tank to provide a sturdy platform for the main gun.

(5) *Gunner.* Under the direction of the tank commander, the gunner aims and fires the main tank gun and the coaxial machinegun.

(6) *Loader.* The loader loads the main tank gun and the coaxial machinegun, and stows and cares for the ammunition.

Section III. SIGNAL COMMUNICATION

30. General

Communication is a function of command. Each tank unit commander is responsible for the establishment, operation, and maintenance, within his capabilities, of the communication system of his command. In addition, he is responsible for the efficient operation of the portion of his communication system which is functioning in the system of the next higher headquarters. The communication system must be organized to fit the unit task organization. The communication systems of subordinate and supporting elements must be integrated into the unit communication system.

31. Communication Means

a. Radio is the primary means of communication used in tank units. Supplemental means of communication include wire, messenger, visual, and sound. Because no one means of communication is completely reliable by itself, all means must be employed habitually to insure a satisfactory communication system. Instructions for use of these means are contained in SSI's, SOI's (or extracts), and other pertinent signal directives.

b. The flexibility of radio communication allows the unit commander to command and control subordinate elements, yet does not restrict these elements in their ability to maneuver. Radio communication is subject to interference from static, enemy jamming, terrain, and weather. The characteristics of assigned radio equipment must be considered in planning the communication support of any tactical operation. The most important characteristics of radio communication that may affect the tactical situation are the communication planning range of radio sets and the compatibility of tactical communication equipment.

c. Tank units employ primarily vehicular FM and AM radios. Portable FM radios are used for dismounted operations and to supplement mounted radios.

32. Battalion Communication Platoon

a. The battalion communication platoon provides organic communication support to the battalion. The communication officer advises the battalion commander on the technique and use of the organic communication system. He also advises the company commanders on the employment of their communication specialists. He has staff supervision over communication specialists' training.

b. The communication platoon performs the following functions.

(1) Supervises the operation of the battalion communication system.

(2) Installs, operates, and maintains the wire net within the battalion command post and, when required, to subordinate elements, companies, strongpoints, and outposts.

(3) Operates panel displays and message pickup facilities.

(4) Operates the battalion message center and provides messenger service.

(5) Provides message encrypting facilities.

(6) Provides that organizational maintenance outlined in the 20-series technical manuals for the headquarters and

headquarters company's communication and other electronic equipment (less cryptographic), and provides limited organizational maintenance for the line companies.

(7) Procures signal repair parts for the battalion (less cryptographic) and provides for the evacuation of all signal equipment that requires repair beyond organizational maintenance level.

(8) Prepares, maintains, and distributes SOI extracts.

33. Communication Security

The tank unit commander is responsible for his unit's communication security. Communication security includes all measures taken to prevent or delay the enemy's receipt of information from friendly communication systems. It is the responsibility of the unit commander to determine the maximum degree of communication security that he can employ consistent with his mission and the reaction time available to the enemy.

34. Maintenance of Signal Equipment

Each unit commander is responsible for maintenance of signal equipment within his command. The battalion commander is assisted by the communication officer and the battalion communication platoon in the execution of this responsibility.

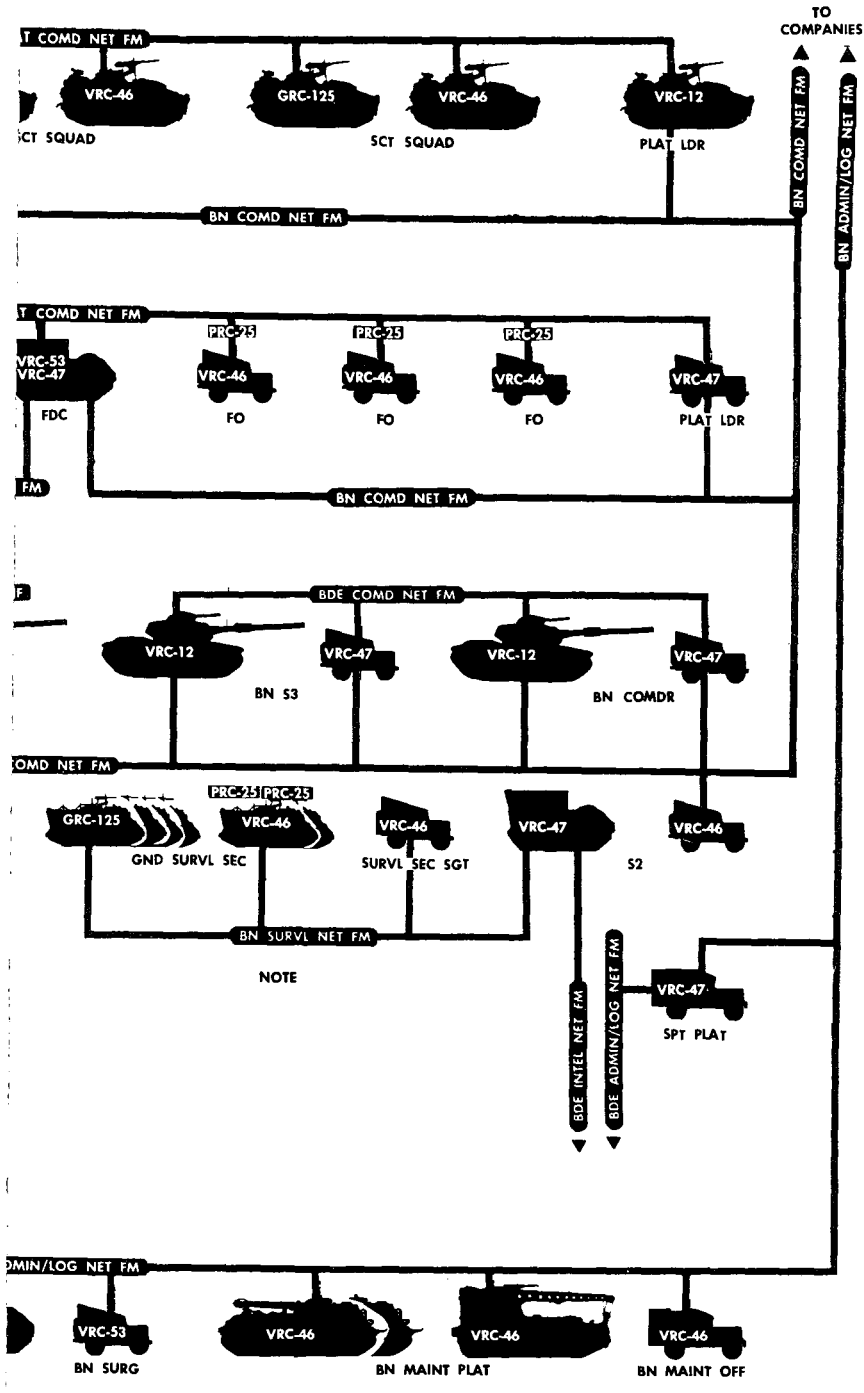
35. Tank Battalion Communication System

a. Type Radio Nets.

(1) *Battalion nets.* The tank battalion employs FM radio nets to control its organic, attached, and combat support elements. FM radio nets established by the battalion are—

(*a*) Battalion command net FM.
(*b*) Battalion administrative/logistical net FM.
(*c*) Battalion heavy mortar platoon command net FM.
(*d*) Battalion reconnaissance platoon command net FM.
(*e*) Battalion surveillance net FM.

(2) *Nets to higher headquarters.* The tank battalion operates FM and AM radios and radio teletypewriters (RATT) in brigade and division nets. AM and RATT equipment extend the communication range and are well-suited for the transmission of lengthy messages. FM radio nets provide the battalion commander and certain key staff officers with a personal means of voice communication with the brigade commander and brigade staff officers.



radio net diagram, tank battalion.

The FM, AM, and RATT radio equipment is employed in the following higher headquarters nets:

(*a*) Brigade command net FM.
(*b*) Brigade administrative/logistical net FM.
(*c*) Brigade command net RATT.
(*d*) Brigade intelligence net FM.
(*e*) Division air request net AM.
(*f*) Division warning broadcast net AM.

(3) *Special purpose nets.*

(*a*) *Supporting artillery nets.* Vehicular radio equipment is used by the artillery liaison section ot permit operation in the tank battalion command net, the supporting artillery fire direction net, or the supporting artillery command and fire direction net. This radio equipment is organic to the supporting artillery unit. The artillery liaison officer uses these nets to coordinate artillery fires with the tank battalion operations. Supporting artillery radio nets are not shown in figure 7 except for one set which is used by the heavy mortar platoon FDC to coordinate fires with the supporting artillery unit or the artillery liaison officer. See FM 6–10 for a detailed discussion of artillery communications means.

(*b*) *Tactical air direction net UHF.* The forward air controller is provided a tank-mounted or a full-tracked personnel carrier-mounted UHF ground-to-air radio set for communication in the tactical air direction net UHF. Using this net, he directs air strikes in support of the battalion .

(*c*) *Spot report receiver system.* Radio equipment is provided to the battalion headquarters to monitor spot reports from pilots flying tactical air missions for the division.

(*d*) *Other special purpose nets.* These may be established as required.

(4) *Type Radio Net.* A type radio net diagram for the tank battalions of a division or separate brigades is shown in figure 7.

b. Type Wire Net. The tank battalion wire net is installed when appropriate and is operated by the battalion communication platoon. This net is installed whenever time permits and is normally used for internal communication at the battalion CP during periods of radio silence, in defensive or stabilized operations, and in assembly areas. Wire lines are installed to each organic and attached company. Lateral wire lines are installed to adjacent units

wherever possible to increase flexibility. Wire lines from supporting units are integrated into the battalion wire system. Brigade installs wire lines from the brigade command post to the battalion. Figure 8 shows a type wire net diagram and indicates the equipment used.

36. Tank Company Communication System

a. Communication Specialists. The tank company is authorized a communication chief and a radio mechanic.

b. Type Radio Nets (fig. 9).

(1) *Platoon command net FM.* Each platoon of the tank company operates in its own platoon FM radio net. The platoon leader and platoon sergeant monitor the company command net.

(2) *Company command net FM.* The tank company operates in a company command net, by which the company commander controls his units from one of the company headquarters tanks or his ¼-ton truck.

(3) *Higher headquarters nets.* The tank company operates in the battalion command net FM and the battalion administrative/logistical net FM.

(4) *Nets used by artillery and mortar forward observers.* An artillery forward observer operating with a tank company is provided communication equipment for monitoring the tank company net and for direct communication with his fire direction center. This equipment is in addition to his own organic radio equipment. The mortar forward observer has his own organic radio equipment to communicate with the mortar fire direction center and the supported unit. For a detailed discussion of forward observer communication, see FM 6–10 for the artillery forward observer and appendix II of this manual for the mortar forward observer.

c. Type Wire Net. Normally, the tank company moves considerably during combat; it has little opportunity to use wire. However, in assembly areas and during the conduct of an area defense, wire can be used to advantage. The tank company wire net is installed, maintained, and operated under the supervision of the company communication chief. The switchboard normally is located in the company command post. One line is installed to each platoon. The switchboard ties in with the battalion wire net when lines are installed by battalion (fig. 10).

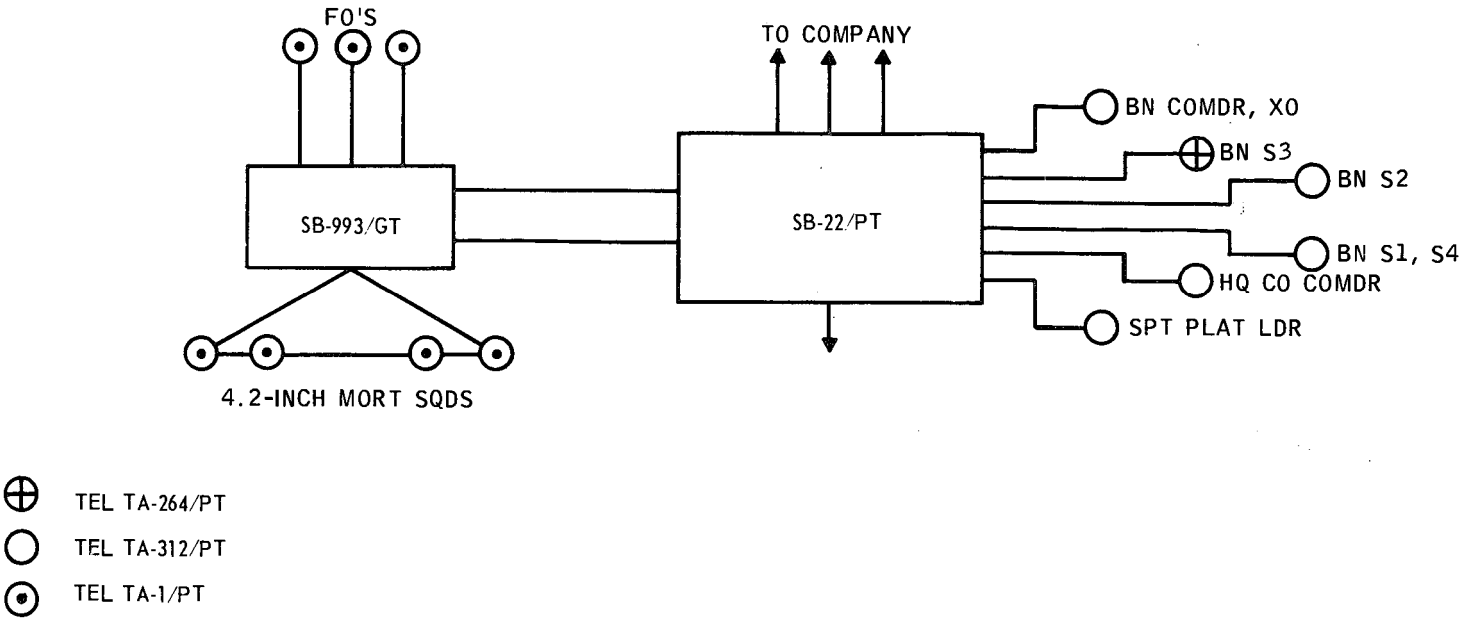


Figure 8. (Superseded) *Typical wire net diagram, tank battalion.*

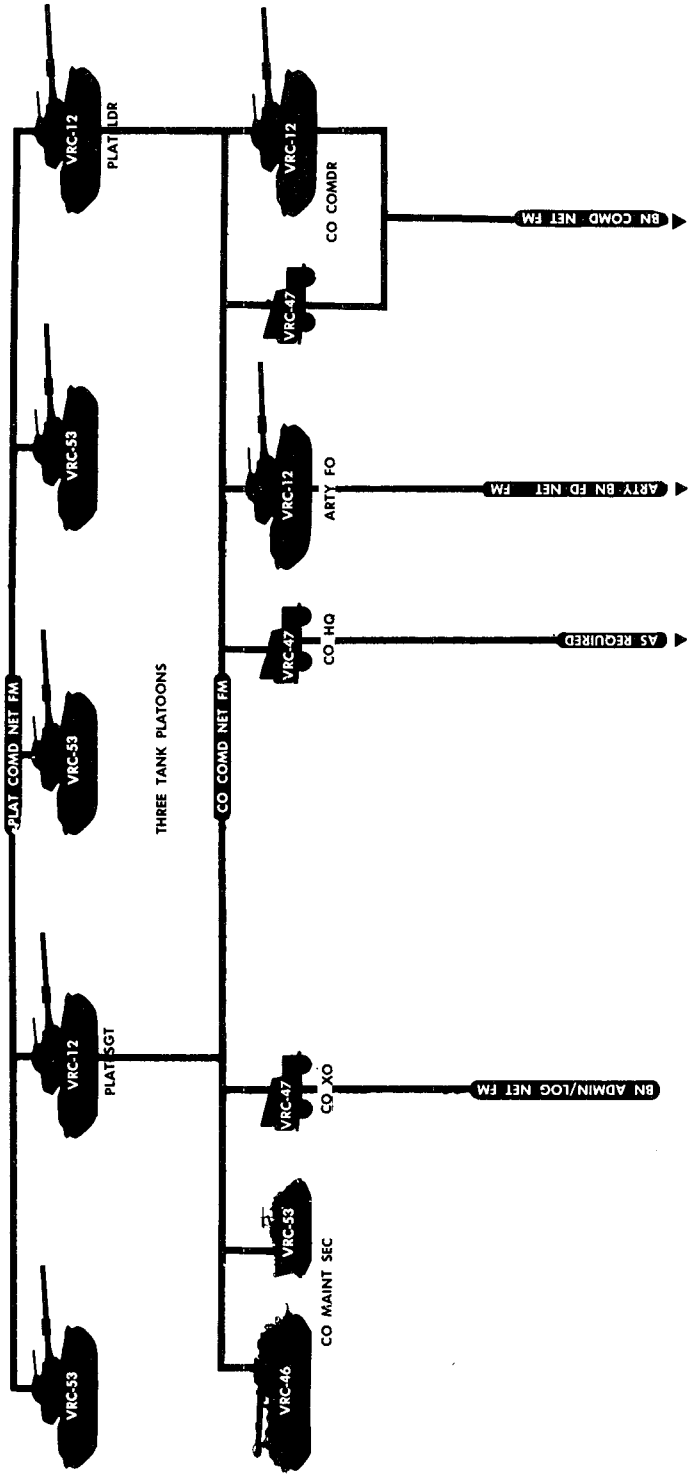


Figure 9. (Superseded) *Type radio net diagram, tank company.*

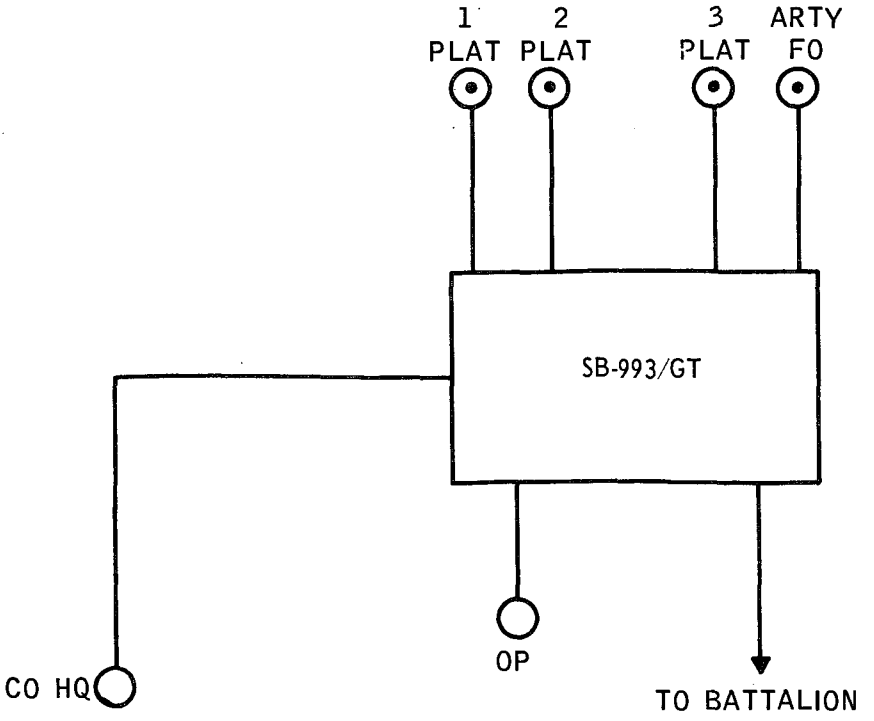


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Figure 10. (Superseded) *Typical wire net diagram, tank company.*

37. Fundamentals of Employment

* * * * * * *

b. A detailed discussion of these precepts is contained in FM 17–1.

47. Tank Battalion Command Post

* * * * * * *

d. (Added) See FM 17–1 for a detailed discussion of the battalion command post and command group.

50. Tank Battalion Formations

The tank battalion * * * at platoon level.

* * * * * * *

b. A formation of all subordinate units **in** line permits employment of maximum firepower forward.

* * * * * * *

51. Tank Company Team and Platoon Formations

* * * * * * *

c. A combat formation *** observation or control. Visual signals used to control formations are discussed in **FM 21–60.**

Page 42, chapter 3. Change chapter title to read: TANK UNIT EMPLOYMENT TECHNIQUES.

62. Distribution of Fire

Unless the fire *** factors are considered:

a. Aggressive Application of Firepower.

(1) The assigned mission of the unit, the tactical situation, **target characteristics,** terrain, and observation will dictate when to open fire with the main gun in its direct fire role. The advantage of **being the first to obtain a hit** outweighs any other single factor in determining the winner of an engagement between weapons of comparable destructiveness and range characteristics. This is of *** each successive shot.

* * * * * * *

c. Supporting Units Available.

* * * * * * *

(4) **Allocated nuclear** weapons should be employed against remunerative nuclear targets, permitting tanks and other supporting fires to be used against targets more appropriate to their capability.

* * * * * *

f. Type of Target.

(1) Generally, the more *** concentrated upon it. **For example, heavy tanks and self-propelled guns may require converging fire from several tanks to effect destruction.**

* * * * * * *

71. Tank Versus Tank—Weapons and Ammunition

b. A chemical energy *** at all ranges. **HEAT will normally be used in a frontal engagement.**

c. A kinetic energy *** at longer range. **APDS will normally be used in a flank engagement.**

* * * * * * *

74. Attack of Antitank Guns

a. Direct fire is *** those being attacked. Smoke is used to blind hostile gun crews, and HE and machinegun fire are uesd to destroy or neutralize them (fig. 40). Because enemy antitank guns are often protected by mines, tanks normally do not overrun the guns but destroy them with HE fire (fig. 41). Attached mechanized **infantry** or infantry elements may assist by locating enemy tanks and self-propelled guns and designating them as targets to the tanks. When unarmored antitank *** infantry weapons (fig. 42).

b. Tanks engage self-propelled *** are practically helpless. Tanks immediately destroy them by fire **and by** overrunning their crews.

75. Attack of Artillery Positions

a. Enemy artillery positions normally **will** be encountered immediately in rear of the hostile defensive positions. The destruction of *** the advancing tanks.

* * * * * * *

76.1 Air Defense Measures
(Added)

a. Tank units are vulnerable to air attacks during all phases of operations. Active air defense means available include tactical aircraft, Army air defense weapons, and organic automatic weapons. Pasive air defense means include dispersion, camouflage, and mobility.

b. Organic caliber .50 machineguns can provide units with a defensive capability against hostile low-flying aircraft. These weapons are employed in the air defense role as a part of the unit's local security plan and are not components of an integrated air defense system. Specific guidelines for employment, defense design, and engagement techniques of the caliber .50 machinegun are found in FM 44–1 and FM 23–65.

77. General

a. Tank and mechanized *** mechanized infantry elements. In the conduct of the attack, the ideal to be achieved is to have the arrival of the tank and mechanized infantry elements at the objective so timed as to attain the maximum effects of shock and

armor-protected firepower inherent in the combined arms team. Within the context *** tank-infantry team.

* * * * * * *

78. Basic Principles

a. Because tanks desirably *** of four factors—

(1) *Mission.* (Superseded) If the mission requires rapid, closely controlled movement and if undue enemy interference is not anticipated, mechanized infantry may follow more closely behind the tanks than would be the case if effective antitank fires were being directed at the tanks.

* * * * * * *

79. Methods of Attack for Tanks and Mechanized Infantry

* * * * * * *

c. Regardless of the *** the following apply:

(1) Tanks must be employed so that **maximum** use is made of their battlefield mobility, armor-protected firepower, speed, and shock **effect.**

83. Conduct of the Assault

a. General. The desired goal *** take three forms:

(1) *Tanks and dismounted mechanized infantry assault in coordination.* Regardless of the *** the infantry dismount. **This position is selected by the commander just prior to the assault and can seldom be preplanned.** As the tanks *** fire and movement. In this case, the enemy position(s) offering resistance must be singled out by rifle platoon and squad leaders as individual objectives. When the fire *** of hand grenades. During this time, the tanks continue to saturate the objective with machinegun fire, destroying enemy positions and weapons with the main tank gun **and by overrunning where appropriate.** As the tanks arrive *** are carried out.

(2) *Tanks and mechanized infantry in the mounted assault.* (Superseded) In some situations, when there is limited enemy resistance or because of the nature of the terrain, it may be unnecessary to dismount the mechanized infantry until the objective is overrun. The mounted assault differs from the dismounted assault in the employment of supporting fires and relative time that

mechanized infantry is dismounted, if necessary. In the mounted assault, the integrated force may assault the objective under cover of overhead artillery and mortar fire. Under cover of this fire, tanks and mechanized infantry move onto the objective and may immediately continue the attack. If it is necessary to secure the objective by dismounted action, supporting fires are shifted to isolate the objective.

* * * * * * *

84. Reconnaissance, General

* * * * * * *

c. Reconnaissance and security *** be readily separated. Effective reconnaissance provides a certain amount of security. The activity of *** amount of reconnaissance.

d. Rescinded.

* * * * * * *

85. Reporting Information of the Enemy and Area of Operations

(Superseded)

All units conduct reconnaissance to some degree. Reconnaissance is continuous on the battlefield, and all information of the enemy and terrain is reported as it is obtained, including negative information. All personnel and commanders are alert to report information concerning—

a. Location of antitank weapons, mines, and manmade or natural obstacles and barriers.

b. Changes in the location and/or types of friendly troop units.

c. Progress of the operation.

d. Avenues of approach, routes of withdrawal, and routes of communication.

e. Changes in enemy dispositions.

f. Changes in enemy strengths, by type and number.

g. Enemy attacks; their nature (i.e., air, tank, CBR, nuclear) and size.

h. Probable direction and composition of enemy counterattacks.

i. Changes in enemy weapon fires to include density, direction, size, accuracy, and type shells.

88. Covering Force, General

* * * * * * *

f. All elements of the covering force, including engineers, artillery, **and air cavalry when allocated,** should be placed under one commander. The covering force *** to be covered.

89. Advance Guard, General

a. An advance guard is a security detachment that operates ahead of the main body and behind the covering force, if used, to provide *** or locating bypasses.

* * * * * * *

90. Tank Company and Platoon—Advance Guard

* * * * * * *

c. The leading platoon *** provide this security.

* * * * * * *

(4) Employing reconnaissance by fire, **when required,** before moving out of a covered or concealed position and during movement.

* * * * * * *

d. When his unit *** commander the following:

* * * * * * *

(4) Possible assistance from tactical aircraft, and from air cavalry units or Army aircraft along the route.

* * * * * * *

f. The advance guard *** maximum extent possible. **When executing an advance guard mission and supporting fires are not readily available or timely, the tank platoon leader will develop the situation by fire and movement.**

* * * * * * *

92. Tank Company and Platoon—Flank Guard

* * * * * * *

c. Air cavalry elements or Army aircraft are used as aerial observation posts. This enables a *** ground observation posts.

95. Screening Force

* * * * * * *

b. Though air cavalry, armored cavalry, and mechanized units are better suited for a screening mission, a tank battalion suitably reinforced is capable of performing such a mission. The principles and *** a screening mission.

96. The Tank Company on an Outpost Mission

A tank company *** the security mission.

a. The tank company *** any necessary adjustments.

(1) The tank company *** of enemy approach. **Nuclear fires** are planned on likely target areas.

* * * * * * *

b. At night, positions *** the night positions. The **medium and** short range radars are integrated into the outpost system.

* * * * * * *

100. The Battalion Heavy Mortar Platoon

(Superseded)

a. General. The employment of the battalion heavy mortar platoon is based on its speed of operation and movement, and its constant readiness to provide fire support. (Mortar firing normally is conducted from the on-carrier position.) The platoon leader places himself where he can best direct the effort of his platoon. He is often with the battalion commander or command group. He may control leading elements of the platoon during displacement, conduct reconnaissance, or visit the supported company teams for purposes of coordination.

b. Liaison. The platoon leader maintains liaison with the battalion commander and staff by personal contact or by radio, using the battalion command net. Liaison with the line companies or company teams is provided by the forward observers who use the platoon command net for contact with the platoon position(s).

c. Forward Observer (FO) Teams. FO teams accompany line companies or company teams as specified by battalion order. The FO normally accompanies the company team commander. Commanders of supported company teams are responsible for providing armored vehicle transportation, as required, for platoon FO's. These FO teams formulate and forward requests for fire and adjust mortar fires. These fires may also be adjusted by artillery FO's. All officers and key noncommissioned officers of the battalion must be able to call for and adjust fires in case FO teams are not available. The procedures for requesting, coordinating, and adjusting fires are the same as for artillery fires.

d. Method of Employment. The battalion heavy mortar platoon is best employed in general support of its parent battalion. When required by range limitations of the mortars, inability of the battalion commander to control, or other exigencies of the situa-

tion, the heavy mortar squads are employed in direct support of company teams or the battalion reconnaissance platoon. The heavy mortar squads may be attached to the companies or the platoon. See appendix II for details of employing the battalion heavy mortar platoon.

103. Short Range Ground Radar

Rescinded.

104. Short and Medium Range Radar

(Superseded)

Short and medium range ground radar sets are organic to the battalion's ground surveillance section. These sets provide the battalion with an all-weather capability for battlefield surveillance. This equipment complements other combat surveillance and target acquisition means in the battalion. Its employment is coordinated closely with the employment of patrols, listening posts, observation posts, and with infrared and other sensory devices. Normally, the section is employed in general support of the battalion. See FM 17–1 for details of employment.

105. Division Engineer Support

The mission of engineers organic to divisions is to facilitate the movement of **division** units, and to increase combat effectiveness by means of general engineer work. See FM 17–1 for details of engineer support available to tank units.

106. Armored Vehicle Launched Bridge (AVLB) Section

The mission of *** for the battalion.

* * * * * * *

b. (Superseded) When AVLB's from the division engineer battalion are in direct support of, or attached to the battalion, the battalion commander will normally use the divisional AVLB first and employ his organic AVLB as an assault bridge reserve.

* * * * * * *

108. Employment of Tactical Nuclear Weapons

Armor units may employ tactical nuclear weapons from those provided by higher echelons. The decision to *** employing the weapons. For a discussion of nuclear weapons employment, see **FM 17–1, FM 5–26, and FM 101–31–1 through FM 101–31–3.**

112. Combat Support in the Offense

* * * * * * *

e. Battalion Heavy Mortar Platoon. (Superseded) The platoon supports the attack by firing on targets that cannot be engaged by flat-trajectory weapons and by providing screening smoke. Fires of the platoon are coordinated with the fires of artillery (app. II).

* * * * * * *

118. Plan of Attack

c. Plan of Fire Support. A well-coordinated plan of fire support covers all available fires, including those of organic and attached weapons, tanks, air cavalry vehicles, supporting artillery, plus tactical air and nuclear weapons. Fires support the *** FM's 6–20–1 and 6–20–2.

121. General

The attack is *** fire and movement.

a. Fire and Maneuver. Fire and maneuver *** against the objective.

(1) (Superseded) The base of fire may consist of organic machineguns, tanks, mortars, attached antitank weapons, supporting artillery ,tactical air, air cavalry, and naval gunfire.

(2) (Superseded) Tanks are not normally included in the base of fire because this role does not take maximum advantage of the tanks' characteristics. Tanks may be used in the base of fire, however, when the terrain precludes their employment in the maneuvering force or when the enemy positions contain tanks, antitank weapons, or other weapons which pose a serious threat to the maneuvering force and which cannot be effectively engaged by other means. Only the minimum number of tanks should be used in the base of fire so as not to weaken the maneuvering force.

(3) (Superseded) The maneuvering force will consist of all available tank and infantry units, less those required by (1) and/or (2) above.

* * * * * * *

125. Tank Company Team and Platoon—Conduct of the Attack

* * * * * * *

c. A tank company *** a platoon leader. Similarly, air strikes,

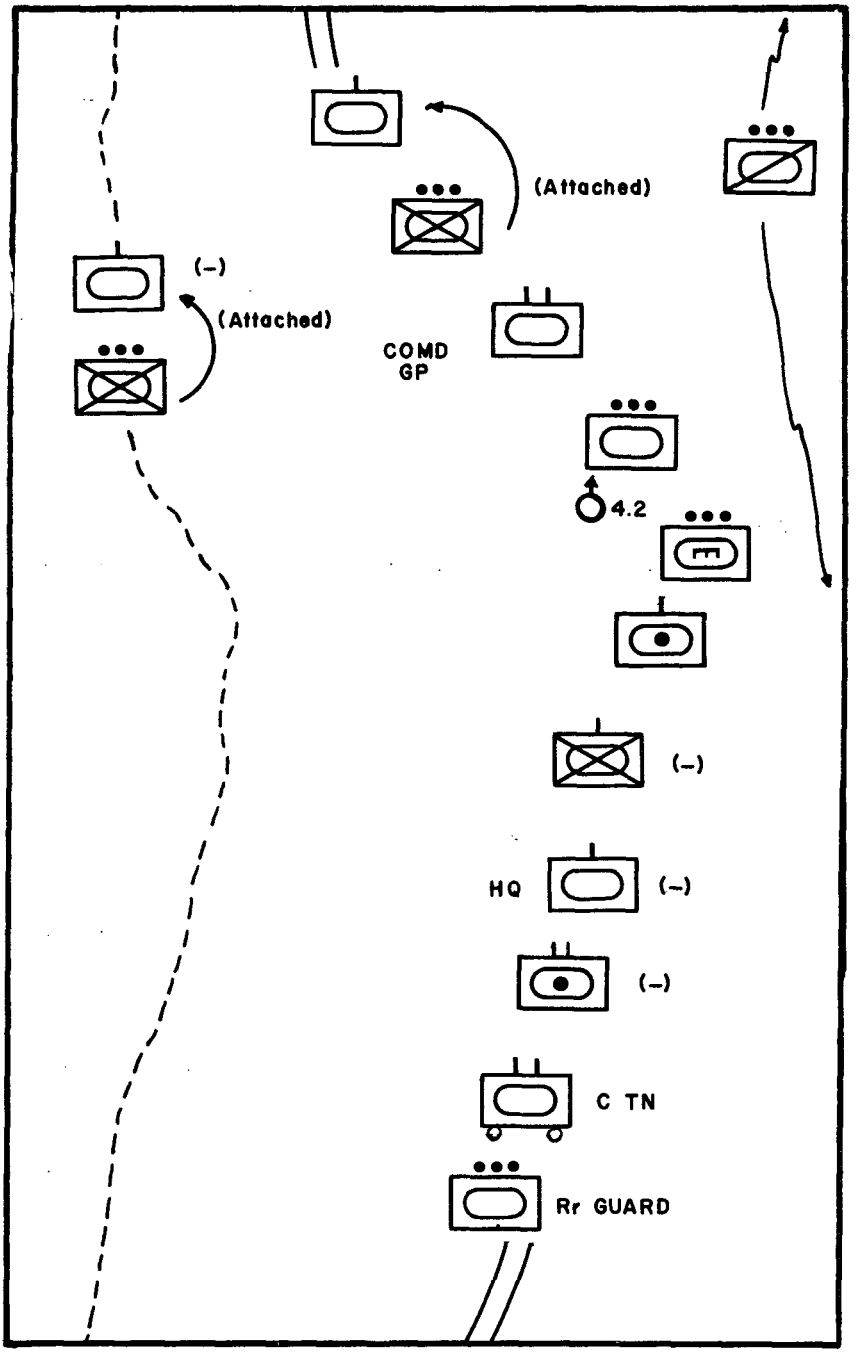

Figure 60. (Superseded) *Task organization and order of march, tank battalion task force, exploitation.*

nuclear fires, and air cavalry elements armed with rockets and guided missiles may be requested through command channels.

* * * * * * *

(2) The actions of *** the attack include—

* * * * * * *

(*d*) (Superseded) Make constant reconnaissance.

* * * * * * *

131. Composition of Exploiting Force

a. General. In the exploitation *** indirect-fire weapons. Close coordination with **air cavalry units and** supporting tactical air must be achieved.

* * * * * * *

141. Conduct of the Pursuit

a. Contact with the enemy *** of substantial buildups. **Air cavalry units are capable of assisting ground units in the pursuit and in the destruction of enemy forces.**

* * * * * * *

143. General

* * * * * * *

b. (Superseded) The commander organizes and conducts the defense through application of the following basic considerations which are discussed in FM 17–1:

(1) Proper use of terrain.
(2) Security.
(3) All-round defense.
(4) Defense in depth.
(5) Responsiveness.
(6) Dispersion.
(7) Maximum use of offensive action.
(8) Integration and coordination of defensive measures, including—
  (*a*) Fire planning.
  (*b*) Barrier planning.
  (*c*) Mutual support.
  (*d*) Surveillance planning.
(9) Time.

148. Preparation of Defensive Positions

* * * * * * *

e. (Superseded) Infantry elements erect necessary camouflage to conceal their activity, site their weapons along principal directions of fire, and dig in; they are prepared to fight in any direction.

* * * * * * *

149. Defense by a Tank Battalion in a Perimeter

* * * * * * *

g. (Superseded) Short and medium range radar will be positioned to cover avenues of approach in accordance with the battalion surveillance plan developed by the battalion S2.

* * * * * * *

158. Company Team, Conduct of the Fixing Force

* * * * * * *

h. Situations will exist *** of his position. The authority to call for **platoon** final protective fires is normally delegated to platoon leaders of platoons on the FEBA.

* * * * * * *

164. The Tank Battalion on a General Outpost Mission

The general outpost *** the battle area.

a. Though an armored cavalry squadron is better suited for such a role, the tank battalion, reinforced with mechanized infantry, infantry, or air cavalry and supported by engineers, artillery, and Army aviation may be employed to form all or part of the general outpost for the division. The exact location *** the division commander.

* * * * * * *

172. General

(Superseded)

See FM 17–1 for a discussion of considerations peculiar to—

a. Defense.

(1) Jungle, desert, and mountain operations.
(2) Operations at defiles.
(3) Limited visibility operations.
(4) Irregular (insurgent) forces' operations.
(5) CBR operations.
(6) Rear area security operations.

b. Night combat techniques, mine warfare, use of obstacles, and employment of ground surveillance radar.

184. Battalion Task Force—Conduct of the Delaying Action

a. As the enemy approaches the first delaying position, he is brought under long range artillery, mortar, and **nuclear** fire. As he closes *** time-consuming maneuvers.

* * * * * * *

e. Command, control, and *** off the atcion. These counterattacks are for limited objectives, if used, and are supported by artillery, mortars, **nuclear** weapons, and elements of the delaying force. **Similarly,** company teams may execute counterattacks for the same reasons but on a more limited scale. Figure 74 illustrates *** employment of reserves.)

186. Company Team Withdrawal to the Next Delaying Position

* * * * * * *

b. Technique of Disengagement. Before the withdrawal *** of the mission. The company team commander may request artillery and mortar fires through the accompanying forward observers or **nuclear** fire through command channels. On occasion, the *** assigned the mission.

* * * * * * *

187. General

A tank battalion *** for this purpose. **This security force is commanded by a single commander who is designated by the task force commander. The security force commander is responsible for the employment of the security force and withdrawal to the next position.** A withdrawal may *** to the rear.

190. Tank Company Team—Daylight Withdrawal

* * * * * * *

c. If the battalion *** the security force. This security force covers the withdrawal of the company team main body and withdraws on order of the **security force** commander in accordance with instructions issued by the task force commander. The security force *** be formed by:

* * * * * * *

192. General

* * * * * * *

c. (Superseded) The organization of the mechanized infantry

division tank battalion is identical to that of the armored division tank battalion.

195. Operations and Employment

* * * * * * *

b. Method of Operation.

* * * * * * *

(4) A battalion may *** administrative support units. Normally, the tank battalion operating as a task force requires the attachment of mechanized infantry and the support of artillery, engineers, Army aviation, and combat service support units.

206. General

* * * * * * *

c. (Superseded) The organizations of the infantry division tank battalion, the mechanized infantry division tank battalion, and the armored division tank battalion are identical.

208. Operations and Employment

a. Battalion Commander and Staff. The tank battalion *** the appropriate commander. The organization and operation of the battalion staff are the same as those of the staff of the armored division tank battalion. Additional problems in *** be made frequently.

* * * * * * *

217. Tank Battalions Attached to the Division Reserve

* * * * * * *

b. Although the tanks attached to the reserve may be occupying firing positions, they must be prepared to move immediately to any part of the division front to block or counter any enemy penetrations.

* * * * * * *

221. Organization, Airborne Division Tank Battalion

Generally the airborne *** are as follows:

a. Rescinded.

* * * * * * *

c. (Superseded) When airlift is a limiting factor, wheeled vehicles can be substituted for the armored tracked vehicles authorized.

222. Mission, Capabilities, and Considerations

* * * * * * *

b. Capabilities. The airborne division *** the following capabilities: [1]

(1) Conduct operations requiring firepower, mobility, **light** armor protection, and shock **effect.**

* * * * * * *

(6) (Superseded) Provide organic nonnuclear fire support.

* * * * * * *

225. Preparation for the Assault

a. Task Organization.

(1) One or more *** of initial objectives. During the assault phase, the tanks normally will **assault objectives with the infantry elements and provide close, continuous, direct-fire support.**

* * * * * * *

Appendix I, make the following changes:

Delete:

FM 6–21	Division Artillery.
FM 57–10	Joint Airborne Operations.

Add:

FM 3–10	Chemical and Biological Weapons Employment.
FM 3–12	Operational Aspects of Radiological Defense.
(S) FM 5–26	Employment of Atomic Demolitions (ADM) (U).
FM 20–33	Ground Flame Warfare.
FM 21–40	Small Unit Procedures in Chemical, Biological and Radiological (CBR) Operators.
FM 21–41	Soldiers Handbook for Chemical and Biological Operations and Nuclear Warfare.
FM 23–65	Browning Machinegun Caliber .50 HB, M2.
FM 101–31–1	Staff Officers' Field Manual, Nuclear Weapons Employment.
(S) FM 101–31–2	Staff Officers' Field Manual, Nuclear Weapons Employment (U).
FM 101–31–3	Staff Officers' Field Manual, Nuclear Weapons Employment.
TM 3–210	Fallout Prediction.

APPENDIX II

THE BATTALION HEAVY MORTAR PLATOON (Superseded)

Section I. GENERAL

1. General

This appendix presents the organization, mission, capabilities, and doctrine for the tactical employment of the battalion heavy mortar platoon.

2. Mission

The battalion heavy mortar platoon provides close and continuous 4.2-inch mortar fire support to its parent battalion.

3. Capabilities

The platoon has the following capabilities:

a. Delivery of a heavy volume of high explosive fire onto area or point targets.

b. Screening large areas with smoke.

c. Battlefield illumination.

d. Delivery of toxic chemical munitions onto area targets.

e. Marking targets for other weapons.

4. Organization

The battalion heavy mortar platoon is organized as described in chapter 1 (fig. 5).

5. Duties

a. Platoon Headquarters.

(1) The platoon leader commands the platoon and supervises the training of all elements. He makes full use of the chain of command to assist him in carrying out these responsibilities. Specifically, he—

(*a*) Makes recommendations for the employment of his platoon.

(*b*) Is responsible for the employment of the platoon in accordance with orders received from the battalion commander or the unit to which attached.
(*c*) Issues orders to his subordinate elements.
(*d*) Supervises execution of orders.
(*e*) Within guidance provided, selects position areas and controls the movement of all elements of the platoon not attached to other units.
(*f*) Keeps himself informed of the enemy and friendly situation.
(*g*) Establishes and maintains liaison with the supported units through the forward observer teams.
(*h*) Establishes a fire control system within the platoon.
(*i*) Prepares a plan for heavy mortar fire support.
(*j*) Within guidance provided plans, initiates, and supervises the timely displacement of all elements of the platoon not attached to other units.
(*k*) Maintains adequate security.
(*l*) Supervises the supply of ammunition to each of the firing squads not attached to other units.
(*m*) Supervises the platoon communication system.
(*n*) Insures that liaison is established and maintained with the fire support coordinator (FSCOORD).
(*o*) Performs other duties as a battalion special staff officer.

(2) The platoon sergeant is the second in command and principal enlisted assistant to the platoon leader and assists him in matters pertaining to discipline, training, and efficiency of enlisted men. He—
(*a*) Is in charge of ammunition supply for the platoon.
(*b*) Performs reconnaissance as directed by the platoon leader.

b. Fire Direction Center.

(1) The chief FDC computer—
(*a*) Takes charge of the fire direction center (FDC) and plans, coordinates, and supervises its activities and training under the direction of the platoon leader. He keeps himself informed of the tactical situation and the schemes of maneuver of the supported units. He is responsible for the preparation of firing data for all fires.
(*b*) Makes the decision to fire mortars. When a target is reported, he examines its location relative to the

frontline, mortar position, and reference points. Then, based upon the nature of the target, the ammunition available, and the announced policy of the battalion commander, he decides whether to fire the mission, as well as the number of mortars to be fired and the amount of ammunition to be used in engaging the target.

(*c*) Is responsible for maintaining ammunition records and initiating ammunition supply action.

(*d*) Is responsible for informing the battalion headquarters of all intelligence information received in the FDC.

(*e*) Checks the accuracy of the chart operators, and records and posts intelligence and tactical information.

(2) The computers and instrument operator, under the supervision of the chief computer, operate and maintain firing charts for the platoon. They formulate and issue fire commands to the squads and maintain a firing record of each mission fired. They operate platoon fire control instruments. They also maintain ammunition records and advise the chief computer of ammunition status.

c. Forward Observer (FO) Teams. These teams accompany the forward units and advise the commander of the supported units of the capabilities of the mortar. They request fires for supported units, observe and adjust fire for the platoon, and may request and adjust artillery fires through the battalion mortar platoon FDC. (For a detailed discussion of the duties of the forward observers, see FM 23–92.)

d. The Heavy Mortar Squad. The heavy mortar squad contains the men and equipment needed to serve one heavy mortar. The squad leader is responsible for the training, discipline, control, and employment of the squad. He supervises the movement of the squad to designated locations, the preparation of the firing positions, and the delivery of fires by the mortar crew.

6. Communication

The platoon employs a flexible communication system using FM radios as the principal means. The platoon leader must operate in the battalion command net FM and in his own platoon net FM. The platoon fire direction center (FDC), operating in these two nets, must also maintain communication with the direct support artillery battalion which is in support of the brigade. Platoon forward observers must enter their supported unit net FM and maintain communication with the mortar platoon FDC.

Mortar squads have the capability to operate in the platoon net FM, but will normally install wire for communication with their FDC when employed under centralized control. See figure 7 for type radio diagram and figure 8 for typical wire net diagram.

7. Fundamentals of Employment

a. General. The employment of the platoon is based upon its speed of operation and movement, and its constant readiness to provide fire support. The platoon leader places himself where he can best control the employment of his platoon. He is often with the battalion commander or command group. He may control leading elements of the platoon during displacement, conduct reconnaissance, or visit the supported company teams for corrdination.

b. Control. The platoon normally operates under battalion control and furnishes support to the line companies or company teams. The platoon is usually employed in general support under the control of the platoon leader; however, a priority of fires may be assigned to a specific unit.

c. Concentration of Effort. This is achieved through centralized control. The platoon normally masses its fires for one mission at a time; however, it can fire two missions concurrently.

d. Movement. The platoon is 100 percent mobile. This mobility permits rapid maneuver of platoon fires throughout the battalion area of operations.

e. Security. The platoon is normally located within, or adjacent to, other friendly combat or combat support elements to obtain maximum security from the friendly elements. The platoon has a limited capability to provide its own security by using platoon members as sentinels.

8. Conduct of Fire

See FM 23–92 for conduct of fire details.

9. Observation

a. General.

(1) Continuous observation affords flexibility of fires and serves as a principal means of gaining information about the enemy and its own units.

(2) The forward observer's area of responsibility for observation is the zone or sector of the supported unit. He observes the most critical areas within the battalion's

area of operations. He must maintain a close working relationship with artillery and company forward observers. Mortar and artillery observers may request and adjust each other's fires through their respective FDC. (For forward observer procedures and duties, see FM's 6–40 and 23–92.)

b. Observation Posts.

(1) Observation posts, including alternates, are established in the area of action of the supported unit to locate targets and direct fire for that unit and other units as may be required.

(2) An observation post should have the following desirable characteristics:

(*a*) Afford the most favorable view of the target area and zone of action.

(*b*) Afford ease of communication with the supported unit and the FDC.

(*c*) Be away from outstanding landmarks.

(*d*) Afford cover and concealment.

(*e*) Afford covered routes of approach from the rear.

(3) The observer selects alternate observation posts to use when hostile fires force him to move or when the primary post is blinded by smoke or haze. When practical, the alternate posts should have a covered route of approach from the primary post.

(4) The location of the observation posts must be coordinated with those of artillery, and when available, 81-mm mortar forward observers of attached mechanized infantry units to insure overlapping coverage of the area forward of, and within, the battle area.

(5) The observer occupies positions and displaces to locations where he can best observe the zone of action of the supported unit.

c. Coordination of Observation. The battalion commander, through his S2, coordinates all organic observation to provide maximum coverage. Additional observation is provided by the supporting artillery. Heavy mortar and artillery units cooperate in fire control by using each other's forward observers to observe and adjust fire. This insures support by the weapon that will best accomplish the mission.

d. Reports. The platoon observers report significant enemy and friendly activities directly to the FDC of the battalion heavy mortar platoon.

e. Aerial Observation. Army aircraft may observe and adjust fires. Direct radio communication is established between the FDC and the observing Army aircraft (FM's 1–100 and 23–92).

10. Liaison

The platoon establishes and maintains continuous liaison with the artillery liaison officer. Communication is maintained with the battalion headquarters and the supporting artillery FDC. During the planning phase and during critical phases of operations, the platoon commander remains with or near the battalion commander. The forward observer teams coordinate with artillery forward observers and the company team commanders in whose area they are working. The platoon commander coordinates with supporting artillery through the artillery liaison officer.

11. Fire Direction

a. The definitions, objectives, techniques, and doctrine of fire direction for indirect firing and mortar gunnery are prescribed in FM 23–92. The purpose of fire direction is to achieve—

(1) Continuous and accurate fire support under all conditions of weather, visibility, and terrain.

(2) Prompt massing of fires.

(3) Flexibility of fires.

(4) Simultaneous placing of fires on numerous targets.

b. The FDC is that element of the platoon consisting of fire direction and communication specialists and equipment that the commander uses for fire direction and fire control. The FDC is located where the fires of the platoon can best be controlled. The FDC helps the commander control the fire missions, translate target intelligence, and convert observers' requests for fire into commands to the firing squads. The efficiency and speed of execution of fire missions depend upon the skill of the men in the use of fire direction techniques and equipment. The chief fire direction computer supervises the activity of the FDC.

c. Mortar fire direction procedures are explained in detail in FM 23–92.

d. The platoon FDC monitors the supporting artillery fire direction net. To insure adequate coverage of targets and to avoid duplication of effort, the battalion FSCOORD integrates the fires of the platoon and the supporting artillery.

12. Fire Support Planning

a. General. The general principles governing coordination of fire

support described for higher command levels are applicable within the battalion.

b. Mortar Fires.

(1) *Responsibility and control.* The platoon leader is responsible for planning, coordinating, preparing, and delivering all fires by his platoon. He gives priority to calls from his parent battalion; however, his platoon may, upon approval of the battalion commander, fire on call of division artillery or adjacent units when such firing will not interfere with firing in support of the battalion.

(2) *Characteristics of mortar.* The mortar has certain characteristics that must be considered in fire planning. These are:

(*a*) High rate of fire for short periods.
(*b*) Ability to fire from deep defilade.
(*c*) Steep angle of fall resulting in a large lethal area.
(*d*) Capability of employment close to mask for protection against enemy fire and observation.
(*e*) Relatively large dispersion pattern.
(*f*) Limited maximum and minimum range capability.
(*g*) Displacement capability and limitations.

c. Mortar Fire Planning.

(1) Fire planning involves the following principles:

(*a*) Close and continuous support of the attacking or defending troops.
(*b*) Maximum prearrangement of fires.
(*c*) Cooperation with adjacent units.
(*d*) Continuous planning.

(2) The detail in which fire plans are prepared depends upon the time available for planning, the extent and accuracy of target locations, the type of operation in which the supported unit or force is engaged, and the requirements of the fire support plan of the higher echelon. Fire planning for a specific operation begins at each level, with the commander announcing his concept of fire support. At battalion level, the fire plan is based primarily upon requests from company teams, battalion headquarters, and those generated from acquired targets. Coordination of heavy mortar and artillery fires is accomplished simultaneously at the battalion CP and at the supporting artillery FDC. The result is one fire plan containing all required information such as graphic layout, target lists, and schedule of fire.

(3) To facilitate the compilation of planned fires, it may be desirable to arrange concentrations into groups, series, or schedules of fires. A system of number and letter prefixes should be used.

(4) The fire capability of the platoon is the aggregate of the fire capabilities of its squads. The fire capabilities chart should show the area that can be covered by each squad.

d. Company Team Fire Planning. The company team commanders, through the mortar and artillery forward observers, request the organic and nonorganic fire support desired. Prior to formulating this request, the forward observer informs the supported commander of the capabilities of the fire support available and obtains from him the following information:

(1) Present location of forward elements.

(2) Plan of attack or defense.

(3) Known enemy locations, including probable avenues of approach, assembly areas, and weapons positions.

(4) Protective fires desired.

(5) Location of the company command post.

e. Processing Fire Plans.

(1) Both the mortar and artillery forward observers send the company commander's fire requests to their respective FDC for consolidation and coordination. Mortar fires are integrated into the artillery fire plan by the fire support coordinator.

(2) Company plans for fire support and the requirements from the battalion commander are integrated into the battalion fire support plan. This plan is prepared under the supervision of the FSCOORD or his designated representative (normally the liaison officer from the artillery battalion in direct support of the brigade) and submitted to the battalion commander for approval.

13. Classification of Fires

a. General. Mortar fires are classified according to type (effects desired), prearranged fires, fires not prearranged (fires on targets of opportunity), and observed and unobserved fires.

b. Types of Fires.

(1) *Destruction fires* are delivered for the purpose of destroying material objects. Destruction fires may be

accomplished by penetration, blast effect, incendiary action, or by a combination of these actions.

(2) *Neutralization fires* are delivered to screen; cause casualties; hamper and interrupt the firing of weapons, movement, or action; and to reduce the combat efficiency of enemy troops.

(3) *Harassing fires* are of less intensity than neutralization fires and are designed to inflict losses, or, by the threat of losses, to disturb the rest of enemy troops, curtail movement and, in general, lower morale.

(4) *Interdiction fires* are placed on an area or point to prevent or hinder its use. Interdiction fire is usually of less intensity than neutralization fire.

c. Prearranged Fires. These are fires for which data have been prepared in advance. They may be prearranged as to both time and place (scheduled fires) or they may be prearranged as to location only and fired on request (on-call fires).

(1) *Scheduled fires* are prearranged fires delivered at a specific time during the maneuver or operation of the supported force. Time is specified in terms of before or after H-hour or on accomplishment of a predetermined movement or task.

(2) *On-call fires* are prearranged fires fired as requested. These fires may have fire data prepared or may be planned as to location only.

(3) *Preparation fire* is intense fire delivered in support of an attack. It is designed to disrupt the enemy's communications, disorganize his defenses, and neutralize his fire support means. Preparations begin before, at, or after H-hour and continue until lifted. They may be lifted at a prearranged time or on request.

(4) *Counterpreparation fire* is a system of intensive fires delivered when imminence of the enemy attack is discovered. It is designed to break up enemy formations; disorganize the enemy's system of command, communication, and observation; decrease the effectiveness of his artillery preparation; and impair the enemy's offensive spirit.

(5) *A concentration* is a volume of fire placed on an area within a limited time, or on an area designated and numbered for future reference as a possible target. All fires except registration fire and barrages are termed

concentrations and may be prearranged fires on targets of opportunity. The actual area covered by any concentration depends upon the nature of the target to be engaged.

(6) *A barrage* is a planned barrier of fire to protect troops and installations by impeding enemy movement across defensive lines or areas. The four mortar squads normally fire one joint barrage approximately 200 meters wide. The general location of the barrage is designated by the battalion commander. The exact location of the barrage is selected by the company commander in whose area it is to be located. These barrages are an integral part of the final protective fires. They are usually planned close-in to friendly positions to cover dangerous avenues of approach. Some factors that influence the distance of barrages from forward troops are—

(*a*) Range from mortar to barrage location.
(*b*) Inability to survey-in mortars or to register.
(*c*) Conditions that result in decreased accuracy of fires (e.g., worn weapons, changing weather conditions, and the state of training of the crew).
(*d*) The degree to which friendly troops are dug-in and protected by overhead cover.
(*e*) The presence of terrain features that might increase fragmentation effect or decrease accuracy (woods or steep slopes).

d. Fires on Targets of Opportunity. Targets of opportunity are those targets located during the course of an action. They may be engaged at any time on request from anyone who can identify the target and adjust fire on it. If a target appears at a point for which no data have been prepared, it is engaged by adjustment following an estimation of the correction in range and deviation from the nearest reference point or by determining its geographic location on a map.

e. Observed and Unobserved Fires. Fire is adjusted by observation whenever possible. Unobserved fires may be delivered on accurately located targets. The effectiveness of unobserved fire depends upon accurate survey data.

14. Reconnaissance, Selection, and Occupation of Position

a. General. The purpose of reconnaissance, selection, and occupation of position (RSOP) is to facilitate rapid movement of mortars into position, insure close and continuous indirect-fire

support, and provide flexibility of movement. The platoon leader must keep himself informed of the situation and anticipated future operations to accomplish timely RSOP. Selected position areas or routes are reported to the battalion S3 and FSCOORD. The battalion mortar platoon leader coordinates the firing positions with the artillery liaison officer. Procedures to be followed by the platoon in the RSOP parallel those outlined in FM 6–140.

b. Reconnaissance.

(1) Position reconnaissance involves a search for locations for the various elements of the platoon, including firing positions, command posts, and observation posts. Mortar range limitations make it imperative that reconnaissance for new firing positions be continuous. In addition to the primary position, alternate and supplementary positions must habitually be reconnoitered and selected. If time permits, these positions and the routes between them are prepared. Reconnaissance parties should be limited to those men and vehicles actually required.

(2) Based upon their knowledge of the weapon, squad leaders must be prepared to recommend position areas from which they can accomplish the desired fire support. Continuous reconnaissance is necessary to locate good positions.

c. Selection. The primary requirement of a position area is that it permit accomplishment of the mission. It is desirable to select position areas that provide concealment and defilade, sufficient space for dispersion, and terrain adaptable for defense of the unit. The high angle firing characteristics of the mortar permit wider selection of positions than is normally considered for artillery weapons. Mortars can be positioned in small openings in woods and close to the base of hills or bluffs; ravines may also be used. These ground formations offer some protection from enemy observation or detection and from weapons other than high angle types. Desirable characteristics of mortar positions include—

(1) Dry, well-drained ground, free from large stones and other obstructions.

(2) Availability of alternate positions.

(3) Location within or near reserve units when such location would not interfere with the mission of either unit.

d. Occupation. When selecting a position, the platoon leader must plan for occupying the area selected, including location of

the weapons, vehicle park, wire routes, and routes into the position. Once he forms his plan, he must issue orders for implementation to include communication and security.

15. Displacement

To carry out its mission of close and continuous fire support, the platoon must displace promptly from one position to another. Planning for displacement and reconnaissance for new positions is continuous. Effective planning and reconnaissance reduce the time that mortar units are out of action during a displacement. The scheme of maneuver of the supported unit influences the time and method of displacement and the location of new positions. Units normally displace by vehicle. Under special conditions, it may be possible to displace by Army transport aerial vehicle.

16. Class V Supplies

a. General. Class V supplies as related to the battalion mortar platoon include nonnuclear ammunition, pyrotechnics, antitank mines, and chemical ammunition. The commander is responsible for the supply of ammunition to his platoon except for elements attached to other units. In such cases, the commander of the unit to which they are attached is responsible for their ammunition supply.

b. Ammunition Loads. The basic load is that quantity of ammunition authorized to be carried on individuals and vehicles of a unit. Replenishment of basic loads to keep pace with expenditure of ammunition is a command responsibility. Only that ammunition necessary to meet anticipated needs is offloaded at positions.

c. Ammunition Replenishment. Ammunition is replenished from the battalion trains as stocks are depleted. Unit distribution is used to deliver ammunition to firing positions when the platoon is employed under battalion control. When mortar squads are attached to company teams, the company team commander will supply ammunition direct to the firing positions.

Section II. TACTICAL EMPLOYMENT

17. General

Regardless of the type operation being conducted, the mortar platoon provides close and continuous fire support to its parent battalion. This section sets forth doctrine for the employment of the platoon in tactical operations.

18. Methods of Employment

a. The mortar squads are best employed in mass under the platoon leader with the mission of general support of the parent battalion. This method affords maximum flexibility in that massed fires can be placed on targets throughout the battalion area of operations. A priority of fire may be assigned to a company team as required.

b. The platoon or one or more of its squads may be given the mission of direct support of a unit when the mortar platoon cannot be effectively employed in general support. The platoon or its squads are positioned by the platoon leader to fire for the designated unit.

c. One or more of the mortar squads may be attached to a company team. At this time, the team commander assumes complete control of, and responsibility for, the mortar squad(s). Attachment is a status, not a mission. The team commander may assign the mission of general support or direct support.

19. Marches

a. The mortar platoon conducts administrative and tactical marches applying the same principles and techniques used by other armor units. (See FM 17–1 for a detailed consideration of march tactics for armor units.)

b. The platoon and its squads must be prepared to deploy from march column, lay, register, and fire missions with speed and accuracy.

20. Assembly Areas

a. The battalion mortar platoon occupies an assembly area employing the same principles and techniques applicable to other armor units. (See FM 17–1 for the general considerations applicable to occupation of assembly areas.)

b. Mortars are positioned to cover likely enemy avenues of approach into the parent organization or supported unit position. Fires are planned to the extent that time and situation permit.

21. Preparation for Attack

a. The battalion mortar platoon prepares for the offense by accomplishing the basic tasks incident to preparation for combat by any armor unit. The platoon will usually accomplish all administrative functions before movement from the assembly area. Weapons, vehicles, radios, and other equipment are checked; ammunition is stowed; troop leading is begun by squad leaders.

b. Initial firing positions are selected and plans are completed for their occupation and for registration of weapons to support the attack. Positions are occupied at the latest practicable time before the attack to minimize detection by the enemy.

c. Fires are planned to support all phases of the attack. These fires are planned in as much detail as possible. When lack of information precludes detailed planning, leaders prepare general plans for providing fires to supported units, including selection of firing positions or the position within the attack formation if contact is not imminent.

22. Conduct of the Attack

a. Fires are delivered in accordance with platoon and squad fire plans. Scheduled fires are delivered at the time and on targets prescribed. Upon completion of scheduled concentrations, the platoon prepares to engage targets of opportunity and deliver on-call fires as requested by supported elements.

b. The platoon leader keeps himself informed of the situation and continues his estimate. Alternate firing positions are occupied when hostile fire makes the primary positions untenable. Supplementary positions are occupied should it become necessary to meet enemy counterattacks from any direction.

c. Mortars displace before supported elements move beyond effective range of the weapon. As a general rule, the platoon or its squads should begin displacement when supported units reach distances equivalent to one-half the range of the primary weapons. (Displacement of the mortars is usually by platoon.) When required to insure continuous fire, the platoon displaces by squads as the requirement for fire support and the tempo of the operation dictate. When mortar squads are attached to companies, the commander of the company to which attached will direct the squad leaders to displace. In fast moving attacks and in movement to contact, the heavy mortar platoon, or one or more squads, must deploy from march column and fire missions as requests are received.

23. Exploitation and Pursuit

The heavy mortar platoon fires are effective in exploitation and pursuit operations as they can be employed against enemy targets with minimum delay and coordination in comparison with other fire support means.

24. Night Attacks

The heavy mortar platoon is employed at night to provide fire support, including illumination.

25. Defense

a. Regardless of whether the parent organization is conducting an area defense or is participating as part of a larger force in a mobile defense, the battalion heavy mortar platoon applies the same general principles in providing fire support.

b. The platoon is employed using the method that best provides the fire support needed by battalion elements. Where possible, the platoon is employed in general support to provide for maximum flexibility; however, squads may be placed in direct support of companies as required.

c. Fire planning in the defense is similar to that described for offensive situations. Fires are planned as—

(1) *Long range fires (concentrations)* to bring the enemy under fire, deceive him as to location of the battle position, and inflict casualties.

(2) *Close defensive fires (concentrations)* to prevent the enemy from reaching a position from which he can launch his assault.

(3) *Final protective fires.* The heavy mortar platoon participates in the final protective fires of the battalion. These fires are assigned to the heavy mortar platoon as one barrage on which all four squads fire jointly.

(4) *Fires (concentrations)* within the battle position that can limit enemy penetration and support counterattacking elements.

d. When the parent organization is all or part of the reserve, fires are planned as described for offensive operations. Fire plans are prepared that support the counterattack plans.

e. During conduct of the defense, fires are delivered on prearranged concentrations and targets of opportunity as requested by supported commanders.

f. Alternate and supplementary positions are designated by the platoon leader or commander of the unit to which heavy mortar squads are attached. Squads move to alternate positions when hostile fire threatens primary positions; supplementary positions are occupied as necessary.

26. Retrograde

a. General. The battalion heavy mortar platoon is employed in retrograde operations applying techniques similar to those used in the defense.

b. Retirement. The platoon will move as part of its parent organization when it participates in a retirement. The heavy mortar squads are interspersed within the column to facilitate rapid deployment into firing positions and to provide fire support to all elements of the battalion.

c. Withdrawal. The platoon provides fire support for its parent battalion throughout all phases of the withdrawal. As the main body withdraws, one or more mortar squads are attached to the security force. The remainder of the platoon withdraws under control of the platoon leader or commander of the unit to which attached. Additional security measures must be taken to prevent weapons left with the security force from falling into enemy hands.

d. Delaying Action. The platoon fires are planned in support of delaying actions. Squads may be placed in direct support of companies because of the relatively wide frontages incident to delaying actions. Positions are occupied and fires are planned to subject the enemy to attack at maximum effective ranges. Targets of opportunity are engaged as they are detected. Use of aerial observers permits full use of the range characteristics of the mortars.

By Order of the Secretary of the Army:

EARLE G. WHEELER,
General, United States Army,
Chief of Staff.

Official:
J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

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NG: State AG (3); Units—Same as Active Army except allowance is one copy to each unit.

USAR: Units—Same as Active Army except allowance is one copy to each unit.

For explanation of abbreviations used, see AR 320-50.

FIELD MANUAL
No. 17–15

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D.C., *4 December 1961*

TANK UNITS, PLATOON, COMPANY, AND BATTALION

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CHAPTER 1
GENERAL

Section I. GENERAL

1. Purpose

This manual sets forth doctrine for the employment of tank platoons, companies, and battalions.

2. Scope

a. This manual provides information on the organization, capabilities, limitations, tactics, techniques of employment, exercise of command, reconnaissance and security, administration and logistics; and tactical operations appropriate to all tank battalions and their subordinate elements.

b. The procedures described herein are intended as guides only and are not to be considered inflexible. Each new situation in combat must be solved by an intelligent interpretation and application of the doctrine set forth herein.

c. This manual should be used in conjunction with FM 17–1, Armor Operations; FM 17–30, Armored Brigade; FM 61–24, Division Communications; and FM 54–2, Division Logistics and Support Command. General information contained in FM 17–1, FM 17–30, and FM 61–24, is repeated in this manual only when necessary to insure clarity and understanding. Although this manual deals primarily with tank units, it emphasizes that tanks normally operate in close coordination with infantry and other arms as a mobile combined arms force. Other manuals which supplement the information in this manual and with which tank unit commanders should be familiar are listed in appendix I.

d. The term "tank" is the approved generic term with respect to tank unit, i.e., *tank platoon, tank company,* and *tank battalion.*

e. Chapters 1–11 are primarily applicable to the tank battalion of the armored, mechanized, and infantry divisions.

f. Unless otherwise specified, the material presented herein is applicable without modification to both nuclear and nonnuclear warfare.

g. Users of this manual are encouraged to recommend changes

or comments to improve its contents. Comments should be keyed to the specific page, paragraph, and line of the text in which change is recommended. Reasons should be provided for each comment to insure understanding and complete evaluation. Comments should be forwarded directly to Commandant, U.S. Army Armor School.

3. General

Technological developments and doctrinal and organizational concepts indicate that increased emphasis will be placed on tactical operations that are characterized by open and fluid warfare, with increased dispersion between tactical formations and installations. The decisive element of these operations will be the rapid concentration of the combat power required to achieve a tactical advantage. Upon the accomplishment of a mission, immediate dispersion of this combat power will be necessary to avoid enemy nuclear retaliation. Tank units are designed for the conduct of mounted mobile warfare. Their capabilities have assumed increased importance within the role that ground forces will play on the battlefield.

4. The Tank Battalion in the Armored Division

The tank battalions constitute the primary combat force and heavy direct firepower of the armored division. Other organizations of the division have the basic function of supporting and complementing the tank battalion. The battalion is normally attached to a brigade and employed in coordination with other combat and combat support elements as a mobile combined arms force in offensive, defensive, and retrograde operations.

5. The Tank Battalion in the Mechanized Division

The tank battalions of the mechanized division are employed in roles that take maximum advantage of the battalions' firepower, armor protection, and mobility consistent with the division mission. One or more tank battalions are normally used as a main attack force in offensive operations and employed as part of the division's reserve or striking force in other offensive or defensive operations. The tank battalion reinforces the mechanized elements of the brigades, thereby adding to the firepower of the brigades and depth to antitank defense.

6. The Tank Battalion in the Infantry Division

The tank battalions of the infantry division are used in roles that take maximum advantage of the battalions' firepower, armor

protection, and mobility, consistent with the division mission. They may be employed as the nucleus of the brigade or division reserve, or to reinforce infantry units in both offensive and defensive operations. The tank battalion increases the strength and firepower of the attack and counterattack, and adds depth to the antitank defense in both the offense and defense.

7. The Airborne Division Tank Battalion

The airborne division tank battalion is used in roles that take maximum advantage of the battalions' firepower, armor protection, and mobility, consistent with the division mission. It may be employed as the nucleus of the brigade or division reserve, or to reinforce infantry units in both offensive and defensive operations. The tank battalion increases the strength and firepower of the attack and counterattack, and adds depth to the antitank defense in both the offense and defense.

8. Tailoring of Forces

The fundamental concept of organization for combat of armor units is based upon the formation of mobile combined arms battalion task forces especially tailored for specific tactical missions. The nucleus of such a force is the combat battalion. Around this nucleus a force is formed, which normally consists of tanks and mechanized infantry, supported by artillery and engineers, in the proportion best suited for the mission. Additional elements, either tactical or tactical support, can be added as necessary. These combined arms forces are not rigid; after commitment, their composition may be quickly adjusted to meet the requirements of a changing situation. The keynote of this concept is flexibility, in that a force of the proper size and composition can easily and quickly be formed for the accomplishment of the mission at hand. Within the battalion task force company teams are formed by cross-attachment of platoons.

9. The Tank

a. The tank is a mounted weapons system designed to execute mounted, mobile operations—in the offense, defense, or retrograde. Possessed of armor-protected firepower and excellent cross-country mobility, the tank is ideally suited for employment in all types of offensive operations, in execution of the mobile defense, in covering force and retrograde operations, and as a counterattacking force in the area defense.

b. The tank is a weapon of decision on the battlefield. The ease

with which the tank can move across country over difficult terrain enables the crew, protected by armor, to maneuver its mounted weapons system from one favorable position to another, influencing the course of an operation in the manner the commander desires. This fast, mobile, armor-protected vehicle is the primary weapon of the tank battalion.

10. The Tanker

The individual soldier in a tank unit must be indoctrinated with the spirit of the offensive. His thinking must be geared to the speed and violence of warfare. He is trained to operate deep in hostile territory; the presence of the enemy to his front, flanks, and rear is a condition to be expected. He must develop a spirit of daring that will insure effective engagement of the enemy.

11. Tank Crew Teamwork

a. The tank crew is a tightly integrated team. While all members have certain primary duties, it must be emphasized constantly, in training and in battle, that success is dependent upon their effectiveness as a crew. They must work together in the maintenance and servicing of their tank. They must function as one in combat, responding swiftly, automatically, and efficiently to each new situation.

b. The efficiency of the tank crew can be improved greatly by training each crew member in the duties of the others, to the limit of the time available and the capacity of the man. This should be done as soon as his primary duties are mastered.

c. For details concerning crew drill and service of the piece, see FM 17–12, and technical manuals appropriate to the vehicle.

12. Mission and Capabilities of the Tank Battalion, Armored, Mechanized, and Infantry Divisions

a. Mission. The mission of the tank battalion is to close with and destroy enemy forces, using fire and maneuver, and shock action in coordination with other arms.

b. Capabilities. Tank units have the following capabilities:

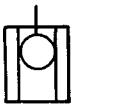
(1) Conduct operations requiring a high degree of firepower, mobility, armor protection, and shock action.

(2) Attack or counterattack under hostile fire.

(3) Destroy enemy armor by fire.

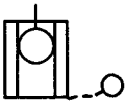
(4) Support mechanized and infantry units by fire, maneuver, and shock action.

LEGEND



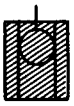
TANK PRIMARY POSITION

TANK ALTERNATE OR SUPPLEMENTARY POSITION

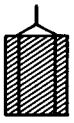


TANK OUTPOSTED BY DISMOUNTED CREW MEMBER

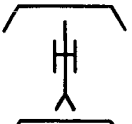
ARMORED PERSONNEL CARRIER



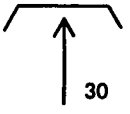
ENEMY TANK POSITION



ENEMY SELF-PROPELLED ANTITANK GUN



TOWED ANTITANK GUN IN POSITION



MACHINE GUN IN POSITION

AGGRESSOR

TYPICAL TANK

NOTE: ILLUSTRATIONS OF VEHICLES AND EQUIPMENT OTHER THAN PHOTOGRAPHS IN THIS MANUAL ARE ARTISTS DRAWINGS AND ARE NOT INTENDED TO INDICATE FUTURE DESIGN

Figure 1. Symbols used in text.

(5) Exploit after breakthrough with high cross-country mobility.

(6) Rapidly exploit the effects of mass destruction weapons.

(7) Provide organic nuclear and nonnuclear fire support.

(8) Conduct combat operations under limited visibility conditions employing infrared viewing devices and surveillance equipment.

(9) When the armored reconnaissance/airborne assault vehicle is substituted for the main battle tank, the battalion is capable of combat operations with a reduction in sustained combat capability in areas where factors of environment impede the operation of heavier vehicles.

(10) Participation in air transported operations when armored reconnaissance/airborne assault vehicle is substituted for the main battle tank.

c. Detailed Capabilities and Limitations. See chapter 12 for capabilities and limitations of airborne division tank battalion.

13. Legend

Figure 1 shows the symbols most frequently used in illustrating this manual.

Section II. ORGANIZATION, ARMORED, MECHANIZED, AND INFANTRY DIVISION TANK BATTALIONS

14. General

a. The tank battalion organization is the same in the armored, mechanized, and infantry divisions.

b. The tank battalion consists of a headquarters and headquarters company, and three tank companies (fig. 2).

15. Headquarters and Headquarters Company

The battalion headquarters contains the battalion commander and his staff. The headquarters company contains a company headquarters, a battalion hedquarters section (including an air control team), a headquarters tank section, an armored cavalry platoon, a battalion communication platoon, a battalion mortar and Davy Crockett platoon, a battalion support platoon, a battalion maintenance platoon, a battalion medical section, a ground surveillance section, and an armored vehicle launched bridge section (fig. 3).

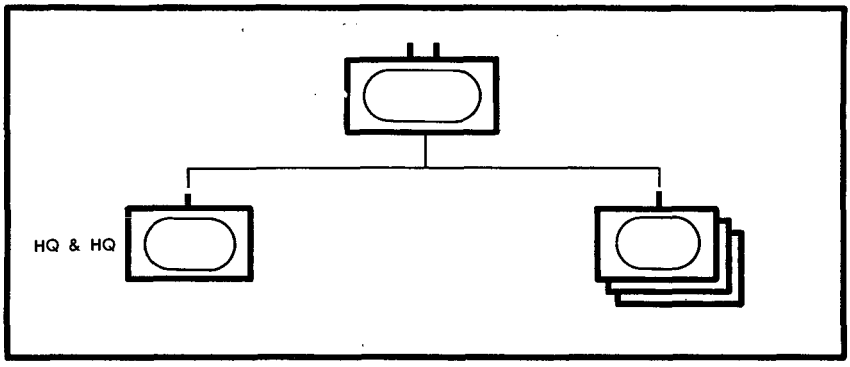


Figure 2. Organization, tank battalion.

16. Battalion Headquarters

The battalion headquarters contains the necessary officers and men to command, control, and supervise the training and operations of the battalion. These include the battalion commander, executive officer, personnel staff officer (S1), intelligence officer (S2), operations officer (S3), S3 air, logistics officer (S4), surgeon, communication officer, maintenance officer, and sergeant major. For duties and responsibilities of the battalion commander and his staff, see FM 17–1.

17. Headquarters Company Headquarters

The company headquarters of the headquarters company provides administrative support for the company and for battalion headquarters. It consists of a company headquarters and a maintenance section.

a. Company Headquarters Section. The company headquarters section includes the company commander, executive officer, first sergeant, supply sergeant, company clerk, and a driver. The company commander may be designated to assume temporarily the duties of any member of the staff.

b. Maintenance Section. The company maintenance section is commanded by a lieutenant who is the company maintenance officer. The section includes the motor sergeant and mechanics and has the function of keeping all headquarters company vehicles and equipment operating at maximum efficiency.

18. Battalion Headquarters Section

The battalion headquarters section provides the bulk of the enlisted men for the staff sections and the vehicles, radios, and

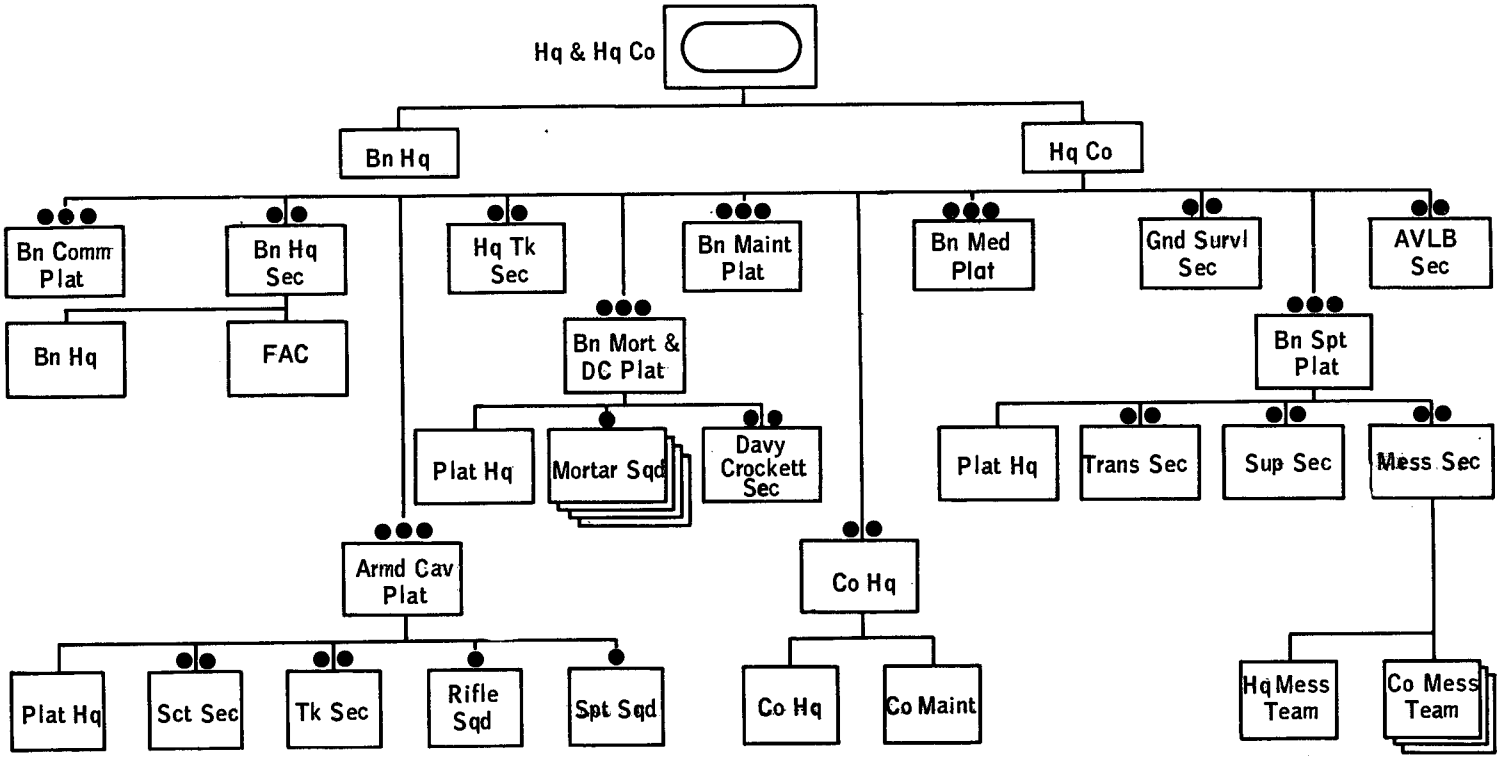


Figure 3. Organization, headquarters and headquarters company, tank battalion.

other equipment needed for the command and control of the battalion. This section also contains two liaison officers, and an air control team, and other enlisted men necessary for operation of the headquarters. Transportation includes armored personnel carriers and necessary general purpose vehicles. (See FM 17–1 for duties and functions of the liaison officers.)

19. Headquarters Tank Section

The headquarters tank section contains a section leader and the necessary enlisted men to man the three tanks with which the section is equipped. These tanks are provided primarily for the use of the battalion commander, operations officer (S3), and artillery liaison officer or forward air controller, and other staff officers as desired. When not otherwise used, tanks of this section may be employed for security of the command post.

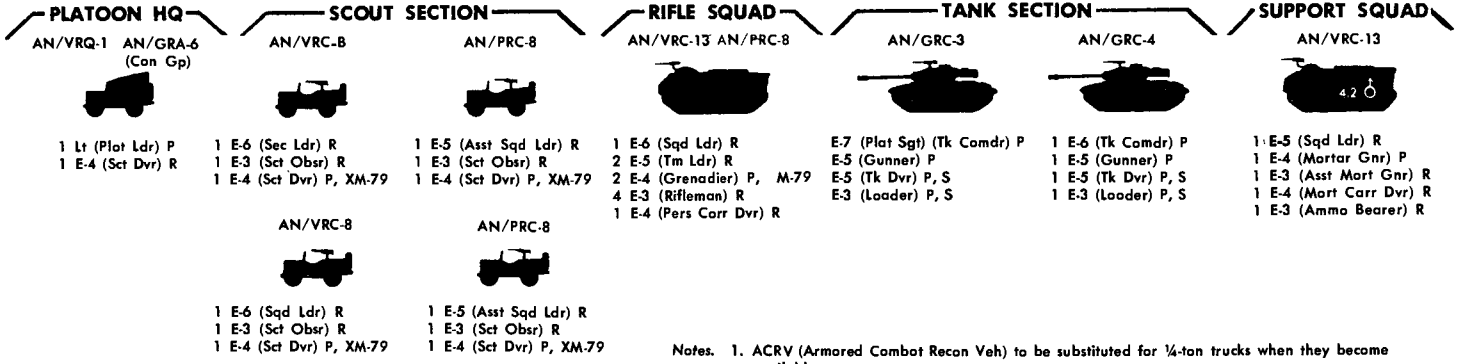
20. Battalion Armored Cavalry Platoon

a. General. The armored cavalry platoon (fig. 4) consists of a platoon headquarters, a scout section, a rifle squad, a tank section, and a support squad. The platoon headquarters consists of the platoon leader, and a scout driver. The scout section consists of 2 squads of 6 men each. The section leader commands one squad. The squad leader of the other squad is also the assistant section leader. The rifle squad consists of a squad leader, an armored personnel carrier driver, and 2 fire teams of 4 men each. The tank section consists of 2 tanks commanded by the platoon sergeant and manned by 7 crewmen. The support squad consists of a squad leader and four men to serve the 4.2-inch mortar.

b. Mission. The armored cavalry platoon performs reconnaissance, and provides security for the battalion within its capabilities. It may be reinforced with additional tanks and mechanized infantry to accomplish these missions. The armored cavalry platoon assists in the control of movements of the battalion, or elements thereof, by performing route reconnaissance, posting of guides and markers, and reconnaissance of assembly areas and attack positions. For details of employment, see FM 17–36.

21. Battalion Mortar and Davy Crockett Platoon

a. General. The battalion mortar and Davy Crockett platoon (fig. 5) furnishes close and continuous nuclear and nonnuclear fire support for the companies of the tank battalion. Normally this platoon is employed directly under battalion control. It is capable of:



Notes. 1. ACRV (Armored Combat Recon Veh) to be substituted for ¼-ton trucks when they become available.
2. Infantry band sets are authorized when organic to mechanized or infantry division tank battalion.

Figure 4. Battalion armored cavalry platoon.

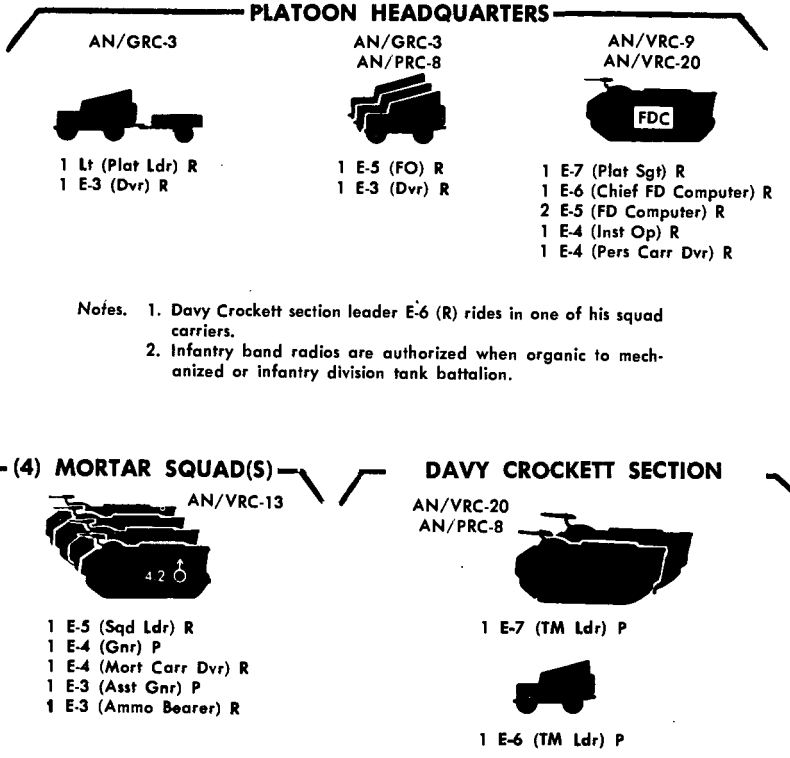


Figure 5. Battalion mortar and Davy Crockett platoon.

(1) Delivery of a heavy volume of high explosive fire onto area or point targets.

(2) Delivery of low-yield nuclear fire onto appropriate targets.

(3) Delivering nuclear and nonnuclear fires on area or point targets.

(4) Delivery of toxic chemical munitions on area targets.

(5) Providing battlefield illumination.

(6) Providing screening smoke.

(7) Marking targets for other weapons.

b. Organization.

(1) The platoon is dependent upon its parent company and battalion for logistical and administrative support and, partially, for security.

(2) The platoon headquarters consists of a platoon leader, platoon sergeant, three forward observer teams, and a

fire direction center (FDC), each having its own transportation and communication facilities.

(3) The two heavy Davy Crockett systems are transported in armored personnel carriers; the light Davy Crockett system is transported in a ¼ ton truck with trailer.

(4) For details of tactical employment of this platoon, see appendix II.

22. Battalion Communication Platoon

The battalion communication platoon, commanded by the battalion communication officer, contains sufficient men, equipment, and organic transport to provide for the installation and maintenance of the battalion communication system. The communication chief actively supervises the assignment and activities of the platoon's message handling, wire, and maintenance men. The platoon is transported in an armored personnel carrier and general purpose trucks. The radioteletype, CW radio equipment, and operators are assigned to the staff section.

23. Battalion Support Platoon

a. General. The support platoon is organized into a platoon headquarters and three sections: transportation section, mess section, and supply section. It is commanded by the platoon leader. The S4 has primary staff interest in employment of the platoon. The platoon has the men, vehicles, and equipment to furnish the transportation, mess, and supply support required by the battalion to sustain itself for limited periods of combat. (Details of its operations are included in 17–1.)

b. Platoon Headquarters. Platoon headquarters consists of a platoon leader and driver. The platoon leader controls the battalion field trains. He has radio communication with the transportation section leader and the battalion S4 over the battalion logistical net or, in emergency, over the battalion command net.

c. Transportation Section. The transportation section is organized and equipped with the men and trucks necessary to transport that part of the battalion basic load of class V and prescribed load of class III that is carried in the battalion trains and other supplies from division distributing points forward. The section leader has radio communication with the support platoon leader and the battalion S4 over the battalion logistical net. He will normally command the battalion combat trains.

d. Supply Section. The supply section operates under the control of the section leader (WO). The section receives and con-

solidates supply requests from the companies; prepares all requisitions, and procures and issues supplies to the companies.

e. Mess Section. The battalion and company mess teams operate under the control of the battalion mess steward. They are capable of providing a battalion consolidated mess, or operating individually as company messes.

24. Battalion Medical Section

The medical section provides unit medical service and medical support for the battalion. It establishes and operates the battalion aid station and provides medical aid-evacuation teams and armored ambulance service to the companies for emergency medical treatment and evacuation of casualties to the battalion aid station. It assists in technical instruction in first aid, field sanitation, and related subjects, and carries out technical inspections of a medical and sanitation nature. (Details of its operation are contained in FM 8–15 and FM 17–1.)

25. Battalion Maintenance Platoon

The battalion maintenance platoon performs second-echelon (organizational) maintenance, recovery and evacuation of vehicles, and supply of parts for weapons and vehicles of the battalion. The platoon is commanded by the battalion maintenance officer, who is assisted by an automotive maintenance technician (WO). He has radio communication with the battalion S4 and unit maintenance sections over the battalion logistical net or, in emergency, over the battalion command net. (Details of operation of the maintenance platoon are contained in FM 9–30, and FM 17–1.)

26. Armored Vehicle Launched Bridge Section

The armored vehicle launched bridge (AVLB) section contains two armored vehicle bridge launchers, each capable of launching a class 60 assault bridge across a gap up to 60 feet wide in a relatively short time and with minimum exposure of the crew. The section is commanded by a section chief. The S3 has primary staff interest in operations of the section. For details of employment, see chapter 6.

27. Ground Surveillance Section

The ground surveillance section contains a surveillance section chief, 1 senior radar operator, and 4 radar operators, 2 of which drive the 2 armored personnel carriers in which the section is

mounted. The section provides the battalion with medium range radar surveillance. The section is commanded by the section leader. The S2 has primary staff interest in the operations of the section. See FM 17–1.

28. Tank Company, Tank Battalion

a. General. The tank company (fig. 6) consists of a company headquarters and 3 tank platoons of 5 tanks each.

b. Tank Company Headquarters. The company headquarters contains a headquarters section, a ground surveillance squad and a maintenance section.

c. Headquarters Section.

(1) Key officers and men in the headquarters section include the company commander, executive officer, first sergeant, communication chief, and supply sergeant.

(*a*) The company commander is responsible for the employment, training, discipline, control, administration, and welfare of his company in garrison and combat. He actively supervises the performance of those under his command. He employs his unit in combat in accordance with orders received from higher headquarters. He positions himself in battle where he can best influence the outcome of the action. In the absence of orders, he makes decisions relative to the employment of his company in accordance with the overall mission and his estimate of the situation.

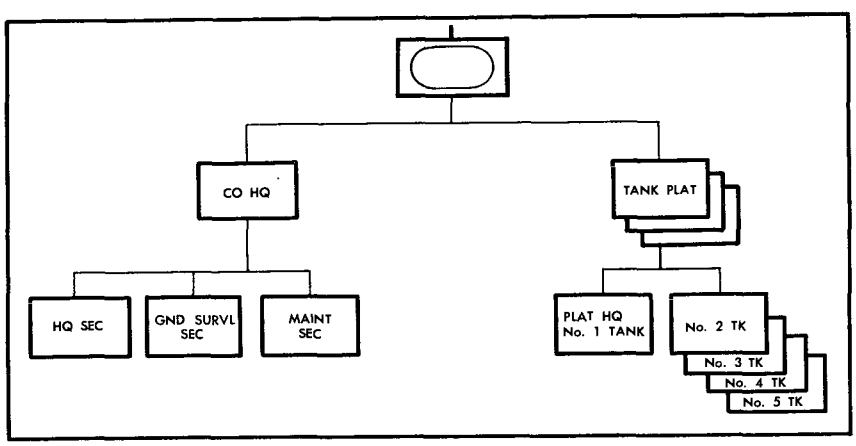


Figure 6. Organization, tank platoon and company.

(*b*) The executive officer is second in command of the company. He keeps abreast of the tactical situation and must be prepared to assume command at any time. As the company commander's principal assistant, the executive officer supervises the functioning of administrative support elements. He handles most of the company administrative details so that the company commander can devote most of his time to operations, training, and discipline. The executive officer is responsible for the movement, security, and operation of the company command post. He insures that communication is maintained with the platoons, the company commander, and battalion headquarters. He is also the company maintennance officer and rides in the maintenance ¼-ton truck.

(2) The headquarters section has two tanks. One of these is used by the company commander; the other normally is used by the artillery forward observer.

(3) When contact with the enemy is not imminent, the company commander may ride in a ¼-ton truck organic to the company headquarters section. The remaining ¼-ton truck may be used by the first sergeant. It may also serve as a messenger vehicle.

d. Ground Surveillance Squad. This squad provides short range radar surveillance for the company. The ground surveillance squad consists of a squad leader and two radar operators. One of the two radar operators operate the squad's armored personnel carrier in which the squad is mounted.

e. Maintenance Section. The maintenance section provides organizational maintenance for the company. The section includes the company maintenance sergeant and radio, turret, and tracked vehicle mechanics. The extent of its operations during combat is determined by the capabilities of its men and the time, tools, and repair parts available. Vehicles requiring extensive repairs that cannot be accomplished at company level are turned over to the battalion maintenance platoon. The maintenance sergeant supervises company organizational maintenance and is in charge of the company repair parts. Specific duties of the maintenance sergeant are contained in TM 9–2810.

29. Tank Platoon

a. General. The tank platoon consists of five tanks, including the platoon leader's tank. The platoon normally operates as a unit. Tanks are numbered 1 through 5. Prefixes or suffixes may

610-517 O - 61 - 2

be used in conjunction with tank numbers as prescribed in organizational SOI and SSI.

b. Duties.

(1) *Platoon leader.* The platoon leader is responsible to the company commander for the discipline and training of his platoon, its maintenance and equipment, and its success in battle.

(2) *Platoon sergeant.* The platoon sergeant is second in command of the platoon and is responsible to the platoon leader for the conduct of the platoon. He is mounted in tank 4.

(3) *Tank commander.* The tank commander directs the movement of the tank, the laying and firing of all tank weapons, the maintenance and supply of the tank, and initial first aid treatment and evacuation of wounded tank crew members from the vehicle. He is responsible to the platoon leader for the tactical employment of the tank and the training and discipline of the crew.

(4) *Driver.* The driver drives the tank.

(5) *Gunner.* The gunner may lay and will fire the main tank gun and the coaxial machinegun.

(6) *Loader.* The loader loads the main tank gun and the coaxial machinegun and stows and cares for their ammunition.

(7) *Crew duties.* See appropriate TM's for detailed crew duties.

Section III. SIGNAL COMMUNICATION

30. General

a. Communication is a function of command. Each tank unit commander is responsible for the establishment, operation, and maintenance, within his capabilities, of the communication system of his command. The communication system must be organized to fit the unit task organization. The communication systems of subordinate and supporting elements must be integrated into the unit communication system.

b. For detailed information on communication see FM's 61–24 and 17–1 (when published).

31. Communication Means

a. Radio is the primary means of communication used in tank units. Supplementary means of communication include wire, mes-

senger, visual, and sound. Because no one means of communication is completely reliable by itself, all means must be employed habitually to insure a satisfactory communication system. Instructions for use of these means are contained in SSI's, SOI's (or extracts) and other pertinent signal directives.

b. The flexibility of radio communication allows the unit commander to command and control subordinate elements, yet does not restrict these elements in their ability to maneuver. Radio communication is subject to interference from static, enemy jamming, terrain, and weather. The characteristics of assigned radio equipment must be considered in planning the communication support of any tactical operation. The most important characteristics of radio communication that may affect the tactical situation are the communication planning range of radio sets, the amount of interference from overlapping or common frequencies, and the compatability of tactical communication equipment.

c. Tank units employ primarily vehicular FM and AM radios. Portable FM radios are used for dismounted operations and to supplement mounted radios.

d. The supplementary means of communication available to armor and their employment are presented in FM's 61–24 and 17–1.

32. Battalion Communication Platoon

a. The battalion communication platoon, commanded by the battalion communication officer, provides organic communication support to the battalion. Under direction of the communication officer, the communication chief supervises the assignments and activities of the platoon's message handling and maintenance specialists. The platoon is transported in an armored personnel carrier and light trucks. Specialists operate the radioteletype and CW radios of the staff section. Their communication specialist training is the responsibility of the battalion communication officer.

b. The battalion communication platoon performs organizational maintenance on communication and other electronic equipment. The communication officer advises the battalion commander on the technique and use of the organic communication system. He also advises the company commanders on the employment of their communication specialists. The communication platoon provides the following services:

(1) Supervises the operation of the battalion communication system.

(2) Installs, operates, and maintains the wire communication system within the battalion command post, and, when required, to subordinate elements, companies, strong points, and outposts.

(3) Operates panel displays and message pickup facilities.

(4) Operates the battalion message center and provides messenger service.

(5) Provides facilities for encrypting messages.

(6) Provides second-echelon maintenance of battalion communication and other electronic equipment.

(7) Prepares, maintains, and distributes SOI extracts.

33. Communication Security

The tank unit commander is responsible for his communication security. Communication security includes all measures taken to prevent or delay the enemy from gaining information from friendly communication systems. It is the responsibility of the unit commander to determine the maximum degree of communication security that he can employ consistent with his mission and the reaction time available to the enemy. For detailed discussion of communication security, see FM's 61–24 and 17–1.

34. Maintenance of Signal Equipment

Each unit commander is responsible for maintenance of signal equipment within his command. The battalion commander is assisted by the communication officer and the battalion communication platoon. This platoon supervises first-echelon maintenance, executes second-echelon maintenance, and procures signal repair parts as required.

35. Tank Company Communication System

a. Communication Specialists. The tank company is authorized a communication chief and a radio mechanic.

b. Type Radio Nets (fig. 7).

(1) *Platoon command net FM.* Each platoon of the tank company operates a platoon FM radio net. The platoon leader and platoon sergeant monitor the company command nets.

(2) *Company command net FM.* The tank company operates a company command net, by which the company commander controls his units from one of the company headquarters tanks or his ¼-ton truck.

(3) *Surveillance net FM.* The ground surveillance radar squad operates in the company command net and in the battalion surveillance net FM.

(4) *Higher headquarters nets.* The tank company operates in the battalion command net FM, and the battalion logistical net FM. For a detailed presentation of these nets see FM's 61–24 and 17–1.

(5) *Nets used by artillery forward observer.* An artillery forward observer operating with a tank company, is provided communication equipment from the tank company in addition to his own organic radio equipment to communicate directly with the supporting artillery fire direction center. He monitors the tank company command net. For a detailed discussion of the artillery forward observer communication means see FM 61–24 and FM 6–10 (when published).

c. Type Wire Net. Normally, the tank company moves considerably during combat; it has little opportunity to use wire. However, in assembly areas and during conduct of an area defense, wire can be used to advantage. The tank company wire net is installed, maintained, and operated under the supervision of the company communication chief. Normally, the switchboard is installed in the company command post. One line is laid to each platoon. The switchboard ties in with the battalion wire net on lines laid by battalion communication wiremen (fig. 8).

36. Tank Battalion Communication System

a. Type Radio Nets (fig. 9).

(1) *Battalion nets.* The tank battalion operates FM radio nets for control of the various sections, platoons, and assigned, attached, or supporting units of the battalion. FM radio nets employed at battalion level are:

(*a*) Battalion command net FM.

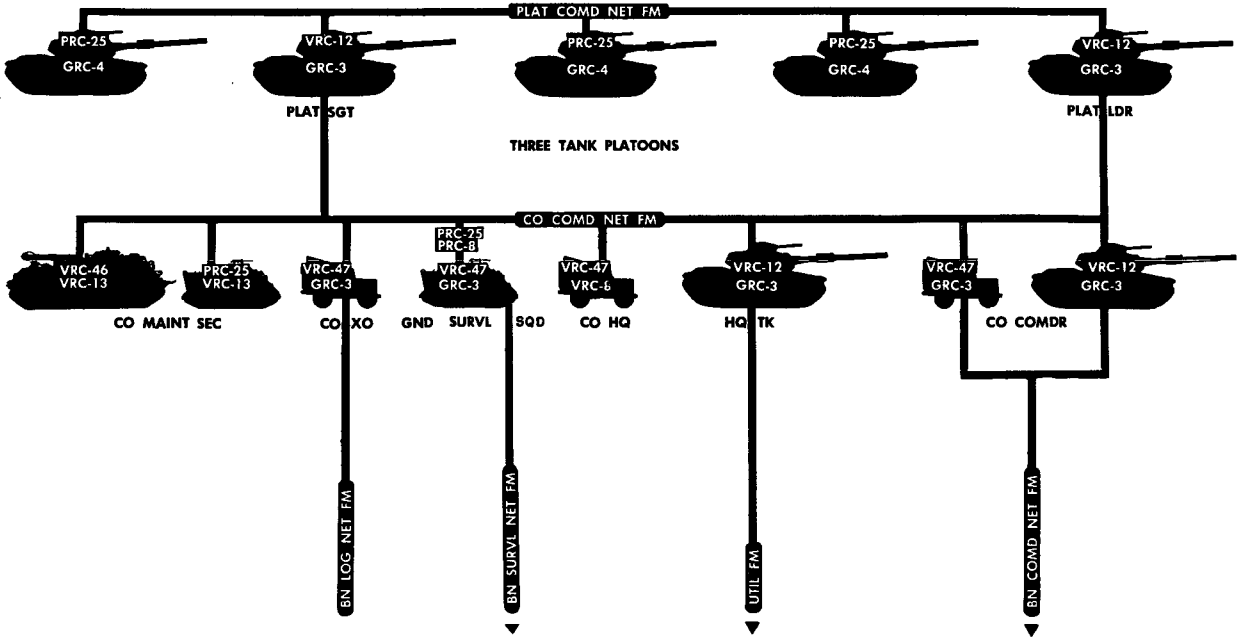
(*b*) Battalion logistical net FM.

(*c*) Mortar platoon command net FM.

(*d*) Armored cavalry platoon command net FM.

(*e*) Battalion surveillance net FM.

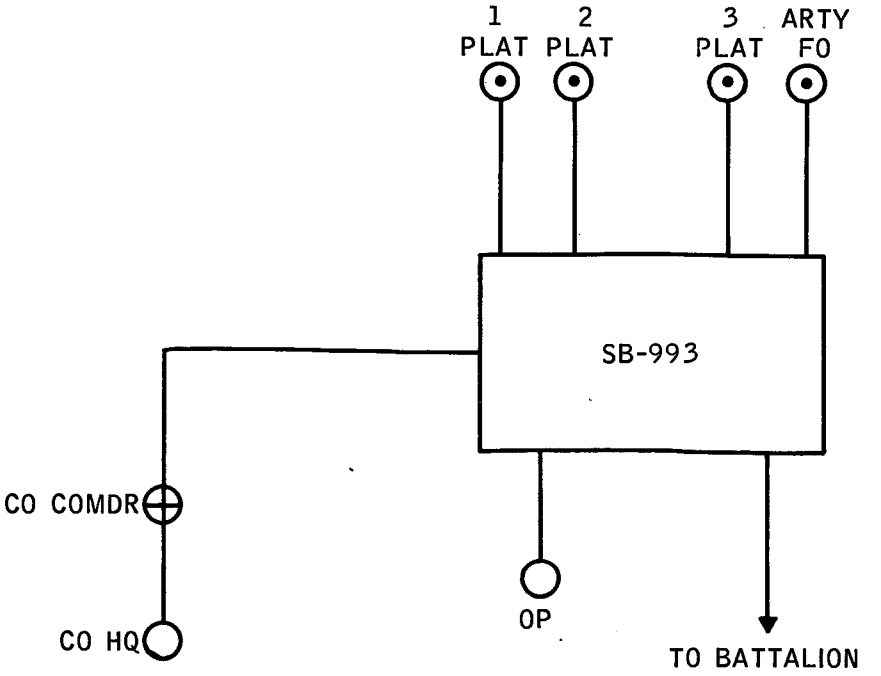
(2) *Supporting artillery nets.* Vehicular radio equipment is used by the artillery liaison section to permit operation in the tank battalion command net, the supporting artillery fire direction net, and the supporting artillery command and fire direction net. The artillery liaison



Notes. 1. New series radios shown above standard series.

2. In mechanized and infantry divisions, infantry band radios are used.

Figure 7. Type radio net diagram, tank company, tank battalion.



⊕ TEL TA-264

○ TEL TA-312

⊙ TEL TA-1/PT

Figure 8. Typical wire net diagram, tank company.

officer uses these nets to coordinate artillery fires with the tank battalion operations. See FM 6–10 (when published) for a detailed discussion on artillery communication means.

(3) *Nets to higher headquarters.* The tank battalion operates FM, AM, and radioteletype (RATT) radios in brigade and division nets. AM and RATT equipment extend the communication planning range and are well suited for the transmission of lengthy situation and logistical reports. FM radio nets provide the battalion

commander and certain key staff officers with a personal means of voice communication with the brigade commander and brigade staff officers. The FM, AM, and RATT radio equipment is employed in the following higher headquarters nets.

(*a*) Brigade command net FM.

(*b*) Brigade logistical net FM.

(*c*) Brigade command net RATT.

(*d*) Brigade intelligence net FM.

(*e*) Division administrative/logistics net AM-RATT.

(*f*) Division air request net AM.

(*g*) Division warning broadcast net AM.

(4) *Special purpose nets.*

(*a*) *Tactical air direction net UHF.* The forward air controller is equipped with both a tank-mounted and a truck-mounted UHF ground-to-air radio set for communication in the tactical air direction net UHF. Using this net, he directs air strikes in support of the battalion.

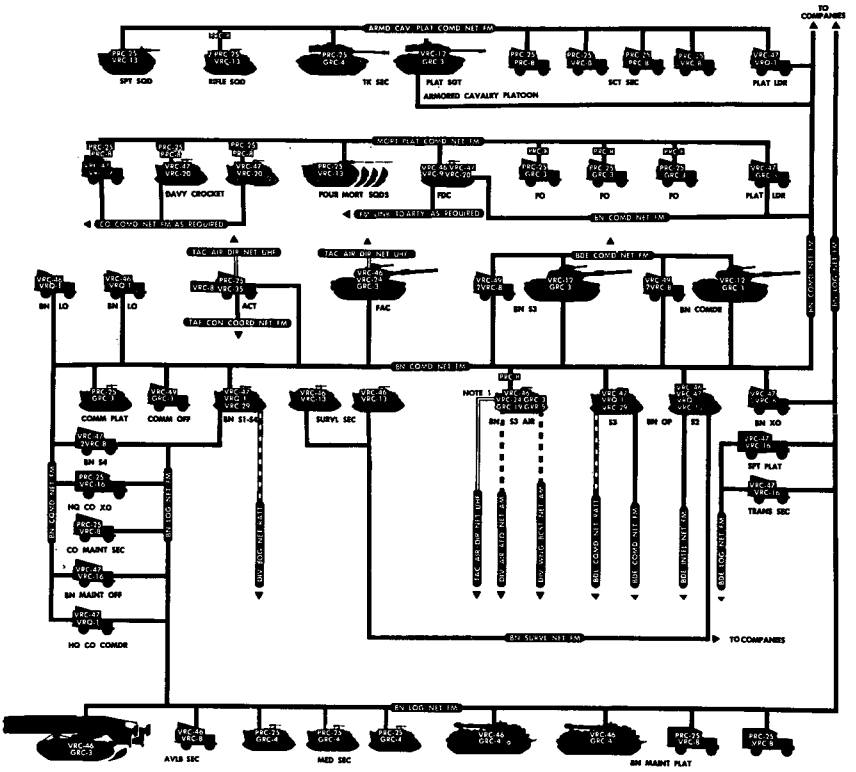
(*b*) *Spot report receiver system.* Radio equipment is provided to the battalion headquarters to monitor spot reports from pilots flying tactical air missions for the division.

(*c*) *Other special purpose nets.* These may be established as required.

(5) *Nets used by support Army aerial vehicles.* Communication means of Army aerial vehicles when operating with a tank battalion are discussed in FM's 61–24 and 17–1.

(6) *Radio nets, tank battalion, mechanized and infantry divisions.* The radio net diagrams for the tank battalions of the mechanized and infantry divisions are the same as shown in figure 9 except for different type radio set issued. For detailed information concerning radio nets see FM's 61–24 and 17–1.

b. Type Wire Net. The tank battalion wire net is installed and operated by the battalion communication platoon. This net is installed whenever time will permit and normally is used for internal communication at the battalion CP, during periods of radio silence, in defensive or stabilized operations, and in assembly areas. Wire lines are installed to each organic and attached company. Lateral wire lines are installed to adjacent units wherever possible to increase flexibility. Wire lines from supporting



Notes. 1. **New series radios shown above standard series.**

2. **When organic to mechanized or infantry division, infantry band radios are used.**

Figure 9. Type radio net diagram, tank battalion.

units are integrated into the battalion wire system. Brigade installs wire lines from the brigade command post to the battalion. Figure 10 shows a type wire net diagram and indicates the equipment used.

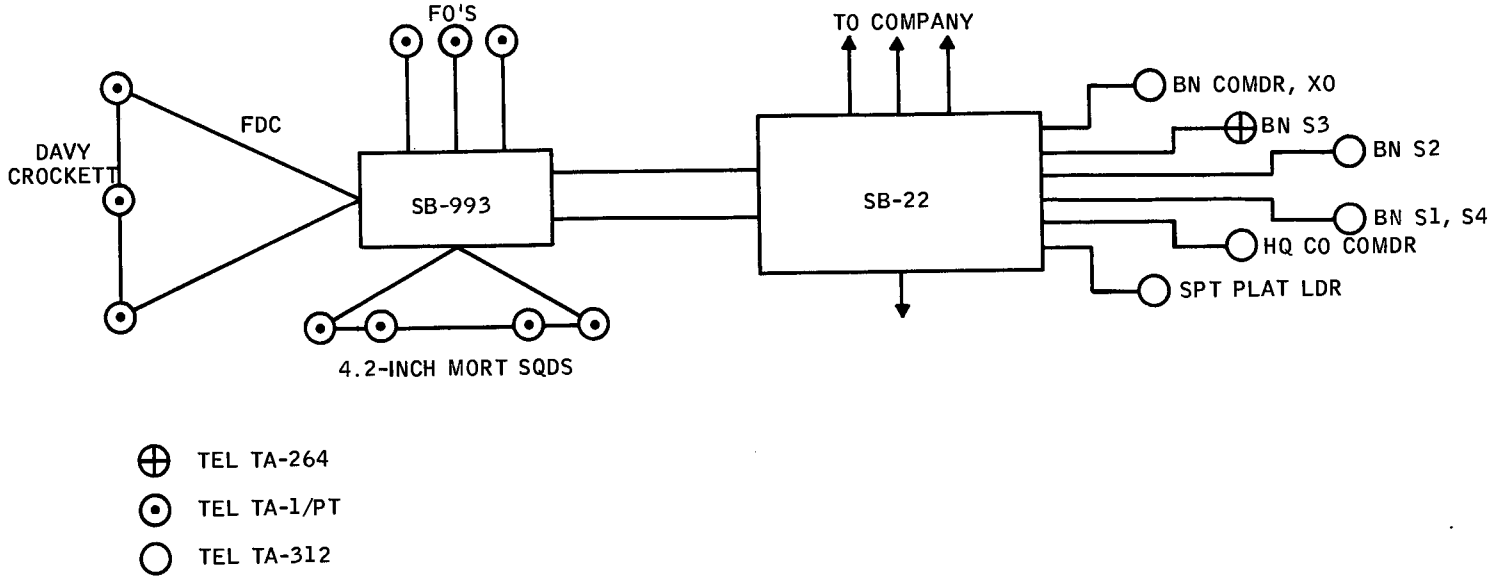


Figure 10. Typical wire net diagram, tank battalion.

CHAPTER 2
COMBAT OPERATIONS—GENERAL

Section I. GENERAL

37. Fundamentals of Employment

a. The employment of armor is governed by the application of the principles of war and certain precepts that are particularly applicable to armor. The successful use of these precepts depends entirely on how imaginative, bold, resourceful, and flexible in mind are commanders and their staffs. Commanders must be willing to take calculated risks.

b. A detailed discussion of these precepts are contained in FM 17–1.

38. Factors Affecting Employment

a. Armor must be employed in a manner calculated to make maximum use of its favorable characteristics. The employment of armor is based upon the commander's consideration of four paramount factors: the mission, the enemy, terrain and weather, and the troops available. These four factors are considered constantly and simultaneously by the commander.

b. A detailed discussion of the factors of mission, enemy, terrain and weather, and troops available (METT) is found in FM 17–1.

Section II. ORGANIZATION FOR COMBAT

39. General

a. The tank battalion is normally attached to a brigade for tactical employment. The brigade commander organizes, through cross-attachment, the tactical maneuver battalions that have been attached to his brigade into battalion task forces. Combat support and administrative support elements are attached to or placed in support of the combat maneuver battalions as required. See FM 17–30 and FM 7–30 for a discussion of brigade organization for combat. The combat maneuver battalion commander normally will organize his battalion or battalion task force for combat by

cross-attachment of platoons of his organic or attached maneuver companies to form company teams. Combat support and administrative support elements are provided the company teams as required.

b. The tank battalion task force, reinforced as may be required, may be employed directly under division control when it is not practical or desirable for it to be attached to a brigade, i.e., when employed as a covering force for the division or a brigade. The battalion commander organizes his battalion for combat in the same manner as when his battalion is attached to a brigade.

c. The tank battalion and tank company may be employed without attachments when the tactical situation requires such an organization for combat.

d. The commander's estimate of the situation and troops available will govern whether the tank battalion and its organic or attached companies are to be organized for combat with a preponderance of tanks, mechanized infantry, or as balanced (equal tank and mechanized infantry units) forces (fig. 11). The following conditions, used in conjunction with the factors of METT, may be considered in determining the type of task organization required.

(1) *Tank or tank-heavy task organization.*

(*a*) Good tank terrain—open, few obstacles.

(*b*) Few or no built-up areas.

(*c*) Strong enemy armor opposition.

(*d*) Desert operations.

(*e*) Speed and shock action desired.

(*f*) Pursuit operations.

(2) *Mechanized infantry or mechanized infantry-heavy task organization.*

(*a*) Restricted visibility.

(*b*) Many built-up areas and natural obstacles.

(*c*) Strong enemy antitank defense.

(*d*) Zones to clear.

(*e*) Built-up areas to clear.

(3) *Balanced task organization.*

(*a*) Enemy situation vague—movement to contact.

(*b*) Equal requirement for tanks and mechanized infantry.

(*c*) Wide front.

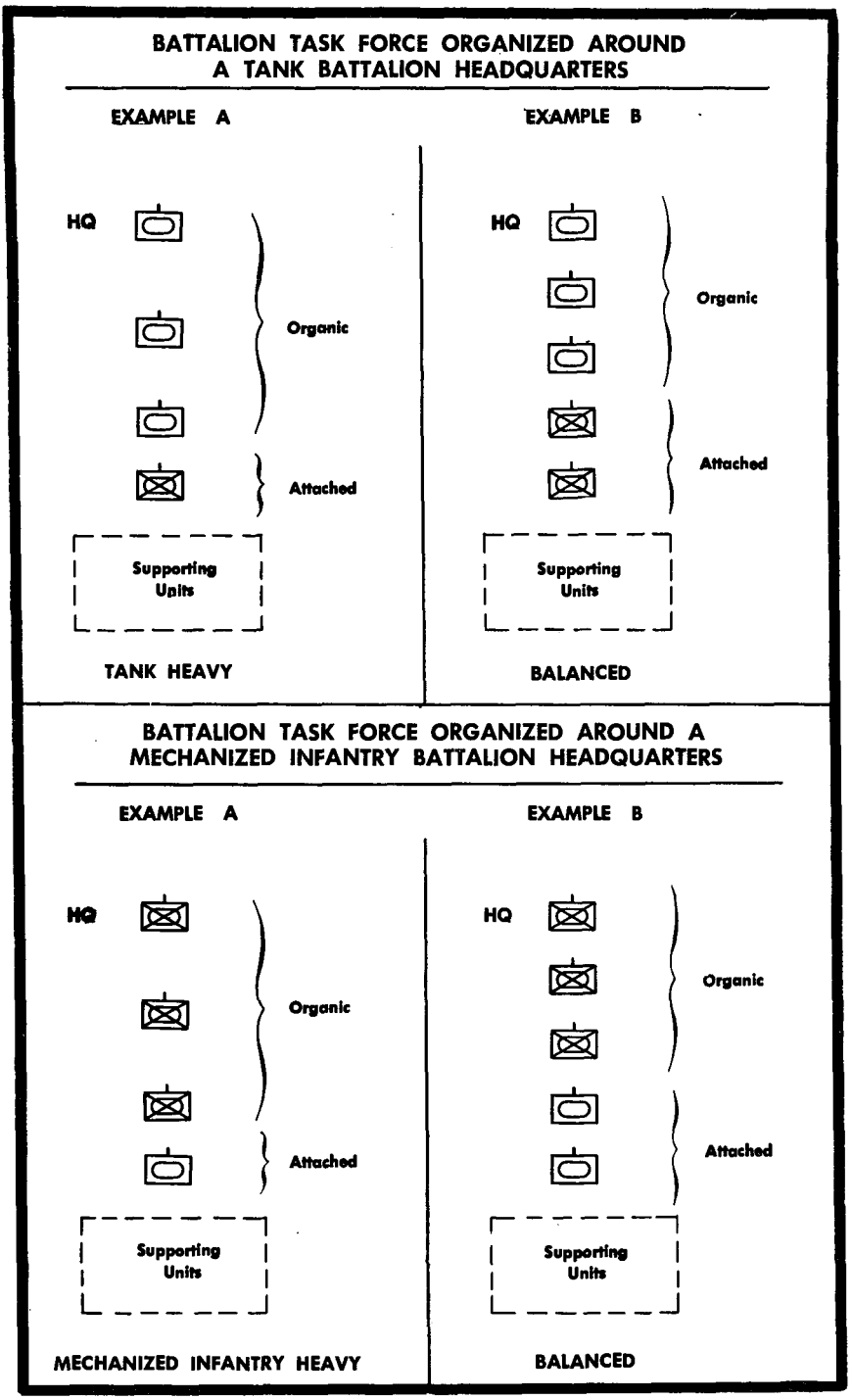


Figure 11. Examples of battalion task forces.

40. Tank Battalion Task Force

a. A tank battalion task force is a temporary grouping of units, formed to provide the battalion task force commander with the number and type of units necessary to accomplish a specific mission or task. A tank battalion task force normally consists of a tank battalion headquarters and headquarters company and one or more organic companies, and one or more attached units of a different branch, plus other attachments.

b. There is no definite rule to determine the size and composition of a tank battalion task force (fig. 11) as this is based on a consideration of the factors of METT. In this respect, the tank battalion task force is similar to the brigade: units of the proper type are attached, or placed in support, in sufficient numbers to carry out the assigned missions. The composition of a tank battalion task force can be changed readily to meet varying tactical situations.

c. A battalion task force will be commanded by the battalion commander receiving an attachment.

41. Tank Company Team

a. A company team is a tactical grouping of units under one tank company commander, formed for a specific operation or mission after consideration of the factors of METT. The company team normally consists of a complete tank company with one or more nonorganic units attached, or a tank company minus one or more organic units with one or more nonorganic units attached.

b. Within the tank battalion task force, the commander organizes company teams (fig. 12).

c. A company team normally is given a designation corresponding to the alphabetical designation of the company forming the nucleus of the team. For example, a company team organized with Company A as the nucleus is usually designated as Team A.

d. A company team is commanded by the commander of the company receiving the attachment.

42. Platoons in Company Teams

Platoons normally are employed as platoons, without cross-attachment, by the company team commander. Tanks and infantry should not be attached in less than platoon strength. To do so is justified only when the terrain or other conditions are such that an entire platoon cannot be used effectively.

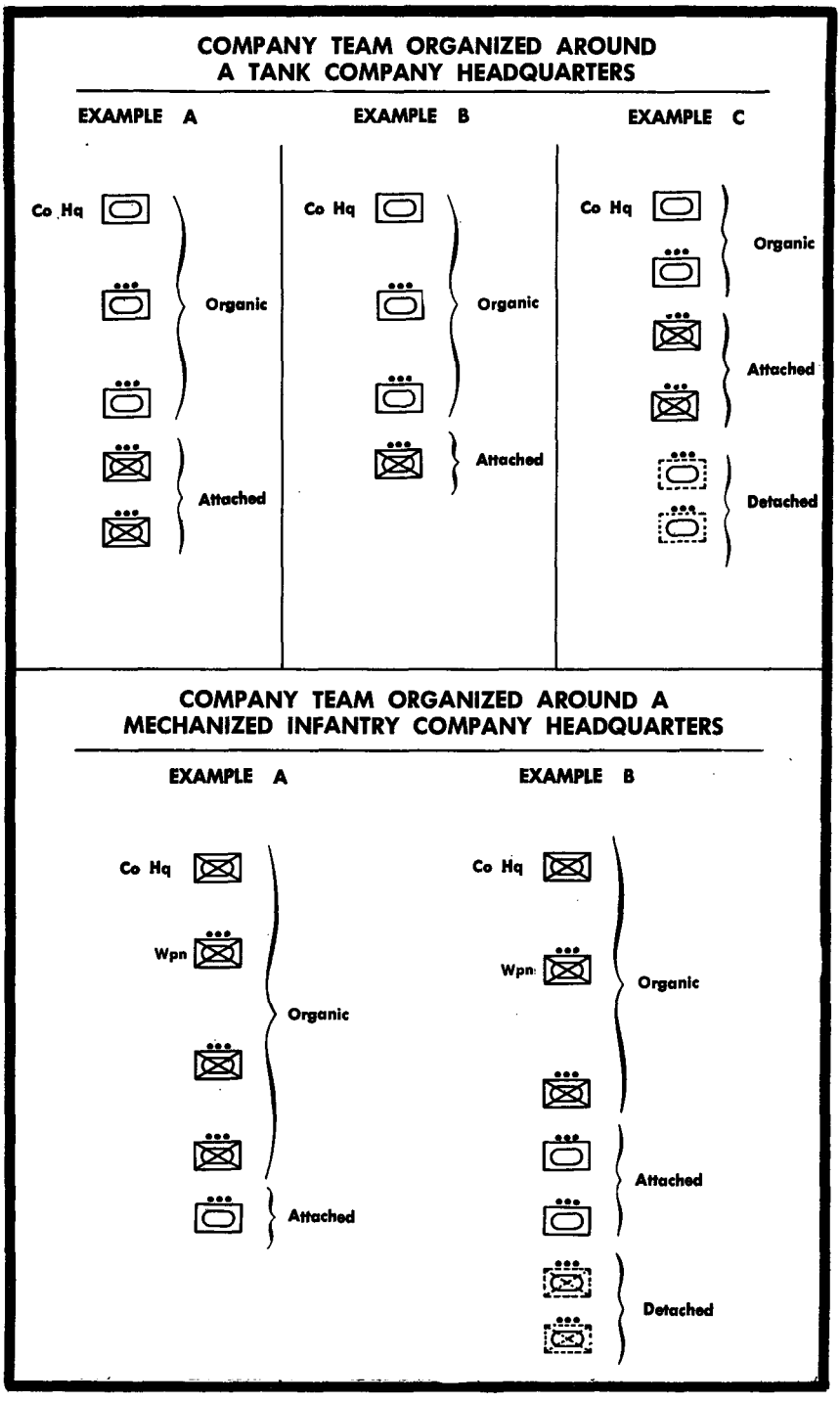


Figure 12. Examples of company teams.

43. Tank Companies Without Attachments

Tank companies are employed at times without attachments, particularly if the battalion (or task force) is operating in a situation in which the success of the companies without infantry can be foreseen, i.e., tank versus tank action.

44. Mutual Support in the Tank Company Team

Mutual support within the tank company team is continuous. All leaders study, plan, and prepare ways of coordinating the elements of the team to meet changing battlefield conditions. Coordinated action among platoons of a company team is attained by orders to each platoon leader from the company team commander and by coordination among platoons.

a. The role of attached mechanized infantry or infantry elements in tank company teams is to assist the advance of the tanks by:

(1) Breaching or removing antitank obstacles.
(2) Assisting in the neutralization or destruction of antitank weapons.
(3) Designating targets for the tanks.
(4) Protecting the tanks against individual antitank measures.
(5) Leading the attack dismounted when necessary.
(6) Providing security for tanks.
(7) Mopping up and assisting in consolidation of the objective.
(8) Protecting the tanks in assembly areas and attack positions.

b. The duties of tank elements in tank company teams are to:

(1) Neutralize or destroy hostile weapons by fire and maneuver.
(2) Clear paths for dismounted infantry through wire and antipersonnel minefields.
(3) Neutralize fortified installations with direct fire.
(4) Support by direct fire when dismounted infantry lead the attack.
(5) Provide antitank protection.
(6) Lead the attack.

45. Reserves

a. With the exception of striking forces as used in the mobile

defense, reserves are those forces withheld from action at the beginning of an operation and available to the commander at a decisive moment to exploit success and complete the mission. A reserve provides a commander with a means of dealing with unforeseeen contingencies. A reserve may be used to:

(1) Exploit success.

(2) Reinforce an attack.

(3) Maintain or increase the momentum of an attack.

(4) Hold ground seized by other attacking forces.

(5) Defeat enemy counterattacks.

(6) Provide security.

b. A deep objective, limited knowledge of the enemy, or inability to visualize the operation to its completion will require retention of a stronger reserve than when these factors are known. When the enemy is known to possess inferior mobility, the reserve may be smaller than when engaging a force of equal or superior mobility.

c. A combat force should not be held out as a reserve if it weakens the main effort. Uncommitted parts of subordinate commands may give the commander a flexible reserve. He must keep abreast of the situation so that he knows what units he has available for this purpose.

d. The tank battalion commander frequently must rely on the mobility of his battalion or battalion task force and the available fire support to influence the action at the decisive moment rather than through designation of a formal reserve. Unengaged units can be moved rapidly to decisive parts of the battle area to exploit a success or counter an enemy attack.

e. Tank units of company and platoon size normally do not designate a formal reserve. The company commander satisfies his requirement for a reserve by providing depth to his formation, by maneuvering his supporting fires, and by making full use of his unit's battlefield mobility.

f. Nuclear weapons allocated to a tank unit may be considered as a reserve, thereby permitting the commander to avoid holding troop units in reserve.

46. Tank Battalion Headquarters Installations

During combat the headquarters and headquarters company usually operates in two echelons: the battalion command post and the battalion trains. The composition of the command post and the trains may vary according to the situation.

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47. Tank Battalion Command Post

a. General. The echelon in which the commander is located or from which he operates is designated the command post. The command post provides facilities for the control of combat and administrative operations. The command post maintains communication with higher, adjacent, supporting, and lower units. It forwards information not available to the command group on new developments in the situation, continuously plans current and future operations, provides liaison with adjacent and higher units, and supervises liaison with supporting and lower units. The command post consists of the battalion commander, battalion staff, such liaison officers or men as are necessary from attached and supporting units, and the necessary supporting enlisted men, vehicles, and equipment.

b. Tactical Operations. The operations-intelligence section uses both S2 and S3 personnel. It must be capable of continuous operations during extended combat. An officer and an enlisted clerical assistant, both familiar with the situation and the operation of the headquarters, must be on duty at all times. During times that situation reports, daily summaries, and other reports are being prepared, it probably will be necessary for additional members of the S2 and S3 sections to be on duty.

c. Administrative Support Operations. The S1 and S4 operate from the command post. Frequently the S4 will be away from the command post to supervise the logistical effort.

48. Tank Battalion Command Group

A command group is a command and control facility, consisting of the commander and selected staff officers, signal means, and a security detachment. This group enables the commander to operate away from his command post to obtain personal knowledge of the situation, exercise leadership, and closely control the operation during critical periods. The command group remains highly mobile and well forward during operations. It has no fixed composition and consists of those officers and men from the command post who can best assist the battalion commander in a given situation. Those who normally accompany the battalion commander are the S3, artillery liaison officer or forward air controller, and necessary liaison and communication personnel. The vehicles in the command group must be equipped with command and fire control radio facilities. The command group must maintain continuous communication with the command post to remain informed of new developments in the situation, and new or supplementary orders from higher headquarters.

49. Tank Battalion Trains

The trains are the elements of the battalion that provide logistical support to the battalion. The trains are normally divided into the combat trains and field trains. The location of the combat trains is in the general locale, but is not contiguous to, the battalion command post. The field trains, when employed, are normally in the brigade trains area. See FM 17–1 for a detailed discussion of the battalion trains.

Section III. COMBAT FORMATIONS

50. Tank Battalion Formations

The tank battalion task force conducts operations in either column or line formation, or in some variation of the two. A unit is in column formation when one major subordinate unit is followed by all major subordinate units regardless of the formation adopted by each major subordinate unit. A unit is in line when two or more subordinate units are abreast, regardless of the formation adopted by each major subordinate unit. A common variation of the line formation is any formation with 2 or more major subordinate units attacking abreast followed by 1 or more remaining units. Other variations of line and column formations are the echelon right or left and wedge, which are normally adopted only at platoon level.

a. A formation with all subordinate units in column provides maximum control, adds depth to the attack, and permits the unit to be deployed to either flank quickly. This formation facilitates retention of the initiative, as the following units can move through or around the leading unit to maintain the momentum of the attack.

b. A formation of all subordinate units or line permits employment of maximum firepower forward.

c. In a formation with two or more units abreast and the remaining units following, firepower forward is reduced in comparison to the line formation, but depth, flexibility, flank security, and control are improved. For example, a battalion task force advancing with 2 company teams abreast and 1 team following is easier to control and has more maneuverability than when all of its teams are advancing abreast.

51. Tank Company Team and Platoon Formations

a. The tank company team also uses the line and column formation. The company formations do not necessarily conform to that

of the battalion. Hence, the battalion could be advancing in column and its companies could be in line formations.

b. Figures 13–18 show typical formations for tank platoons and companies. When the company commander's order does not

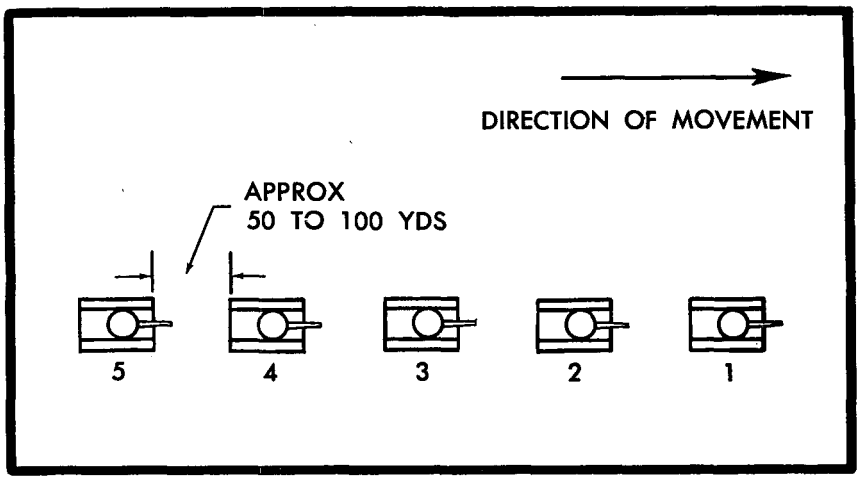

Figure 13. Platoon column formation.

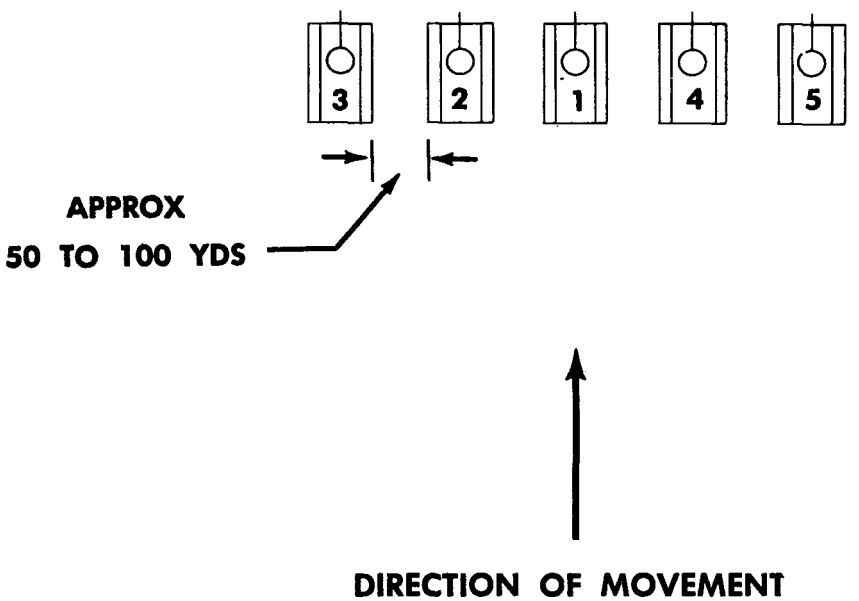

Figure 14. Platoon line formation.

specify the formation within the platoons, each platoon leader is responsible for the selection of an appropriate formation for his unit.

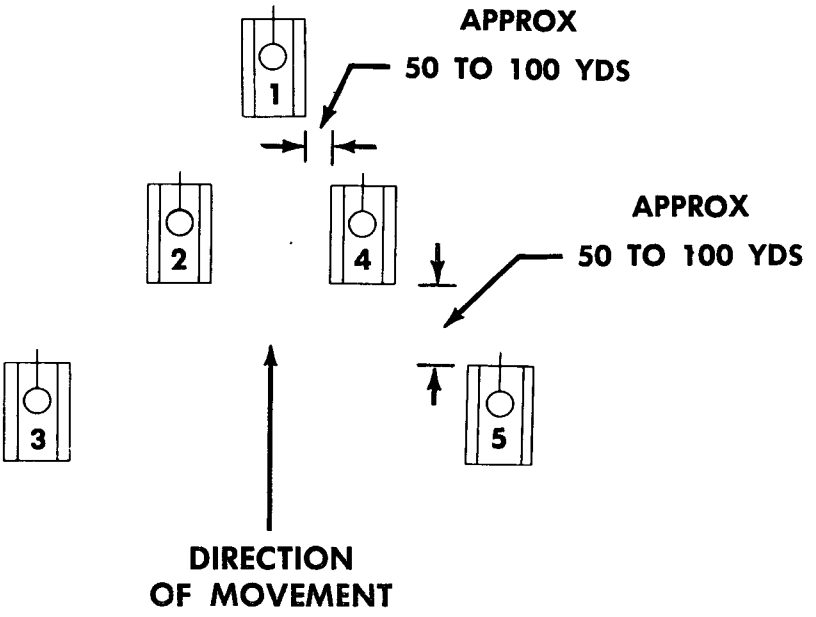

Figure 15. Platoon wedge formation.

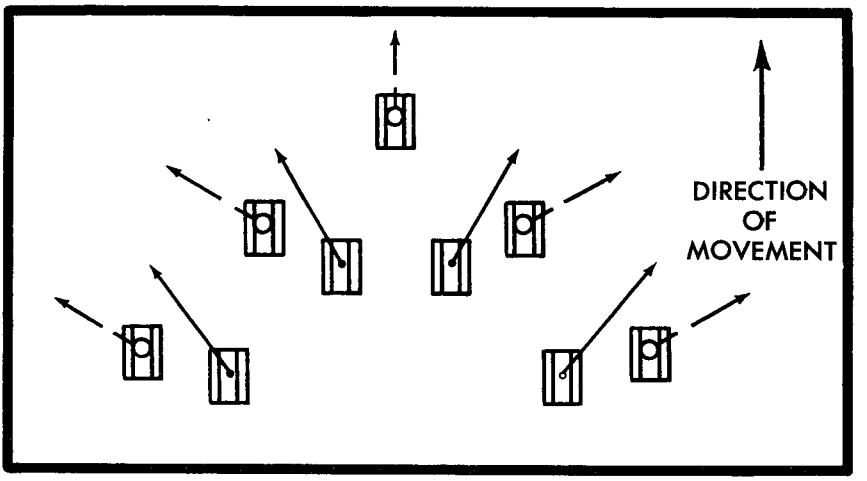

Figure 16. Tank and mechanized rifle platoons in integrated wedge formation.

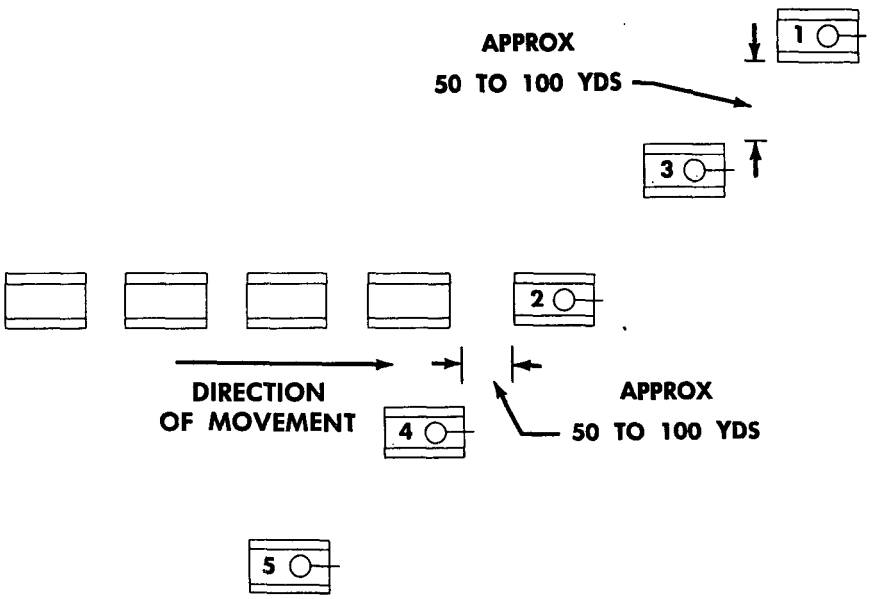

Figure 17. Tank platoon in echelon (right) formation, covering mechanized infantry in column.

c. A combat formation is not rigid. The nature of the terrain, cover, and concealment govern the position of each tank. The company commander and platoon leaders change their positions whenever necessary to improve their observation or control. Visual signals used to control formations are discussed in the battle drill part of FM 17–1.

52. Platoon Formations

a. Column (fig. 13 and A, fig. 18).

(1) Provides good security and permits maximum fire to the flanks, but permits less fire to the front.

(2) Facilitates control.

(3) Facilitates rapid deployment into any other formation.

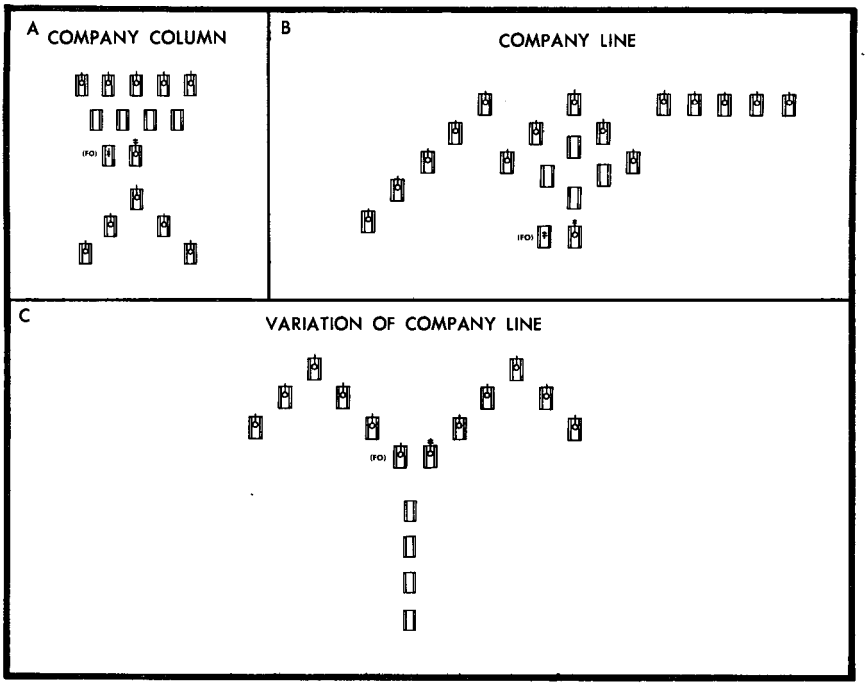

Figure 18. Combat formations, tank company team, showing possible variations of platoon formations.

(4) Is used in approach marches, night movements, and fog, and when passing through defiles or dense woods.

b. Line (fig. 14 and B and C, fig. 18).

(1) Permits maximum fire to the front or rear, minimum fire to the flanks.

(2) Is more difficult to control than column.

(3) Does not provide as much depth as column.

(4) Is used by forces and units in supporting positions. It should be employed by tanks emerging from smoke, crossing crests, leaving woods, and assaulting an objective.

(5) Permits closing on the objective in minimum time.

c. Wedge (figs. 15 and 16).

(1) Permits excellent fire to the front and good fire to each flank.

(2) Facilitates control.

(3) Permits sustained effort and provides flank security.

(4) Lends itself readily to fire and movement.

(5) Is used when the commander wishes a deployed formation that still will allow him effective control and maximum flexibility.

d. Echelon (fig. 17).

(1) Permits excellent fire to the front and to the echeloned flank, fair fire to the other flank.

(2) Is more difficult to control than column.

(3) Permits sustained effort.

(4) Is employed to cover the exposed flank of a larger formation, with a minimum loss of frontal firepower.

53. Changing Platoon Combat Formations

Figure 19 illustrates the technique of moving from one combat formation to another. The base vehicle is the only vehicle that should cross in front of another. Individual tanks should make gradual adjustments in their speed and direction to take up their new positions. Halts and abrupt changes of dierction should be avoided.

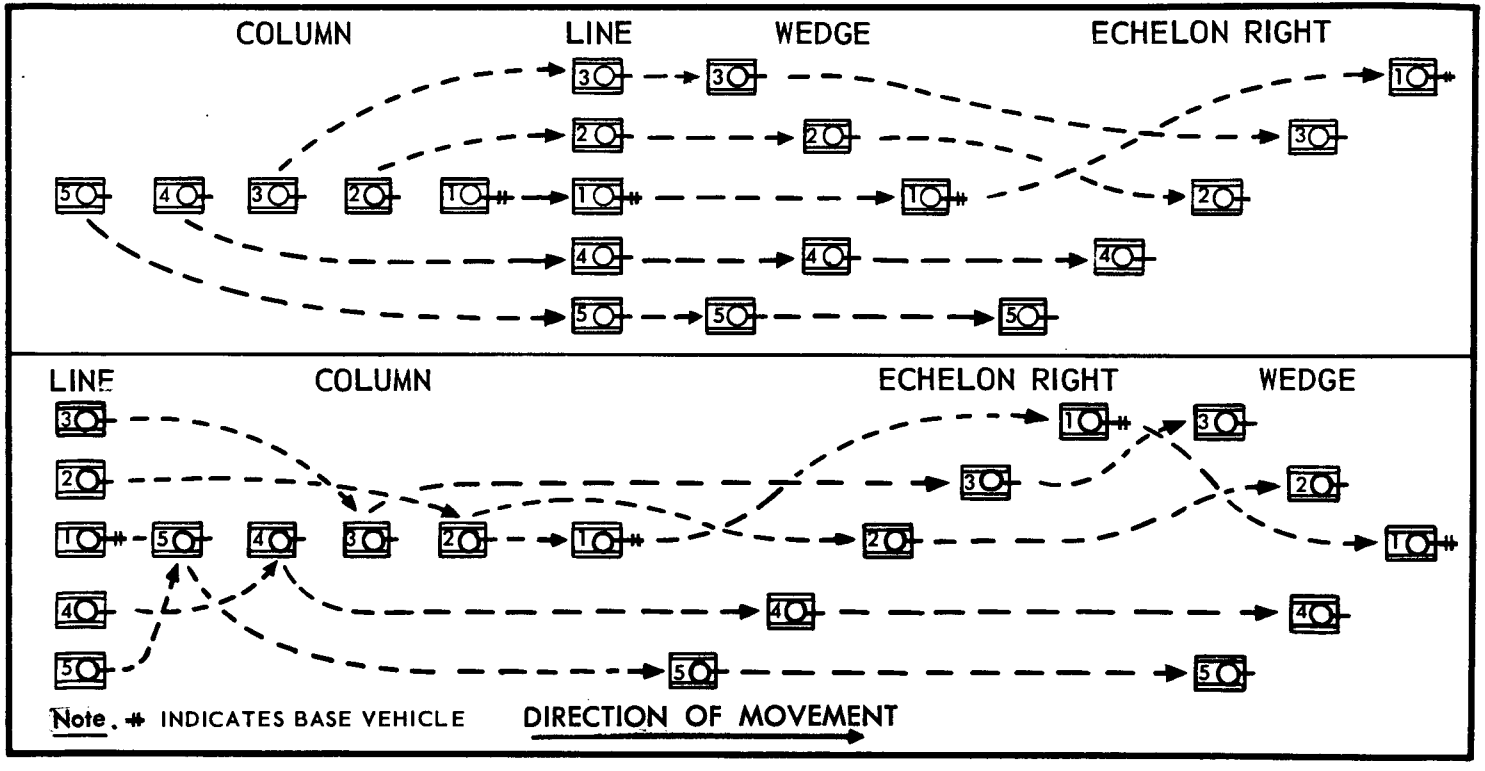

Figure 19. Changing combat formations.

CHAPTER 3
TANK PLATOON EMPLOYMENT TECHNIQUES

Section I. USE OF TERRAIN

54. General

Tank units must use terrain to obtain maximum tactical advantage. The terrain must be used to prevent permature disclosure of positions.

55. Dominant Terrain

Because high ground usually offers observation and fields of fire, its control frequently is decisive.

a. Before an advance through a valley, the ridges on both sides should be cleared or neutralized by fire. The enemy, if he has free use of the ridges, may encourage such an advance to ambush the tanks.

b. Positions on high ground should be selected on either the forward or reserve slope and not on the skyline where any movement is easily detected. The crest of a hill should not be crossed if it can be avoided. Tanks should move around the shoulders of the hill, using available cover and concealment (fig. 20). If it is necessary to cross the crest, the advance should be made in line formation, supported by other tanks in firing positions (fig. 21).

56. Cover and Concealment

Cover is protection from fire; concealment is protection from enemy observation (fig. 22). Cover should be used whenever possible. If there it no cover, the concealment offered by trees, shadows, brush, and houses should be used (fig. 23). Positions behind cover are known as defiladed positions, the degree of defilade depending upon the part of the tank protected from enemy fire (figs. 24 and 25).

57. Conspicuous Landmarks

Care should be used to avoid conspicuous landmarks because they attract the enemy's attention. His artillery and antitank weapons will probably have registered on them (fig. 26).

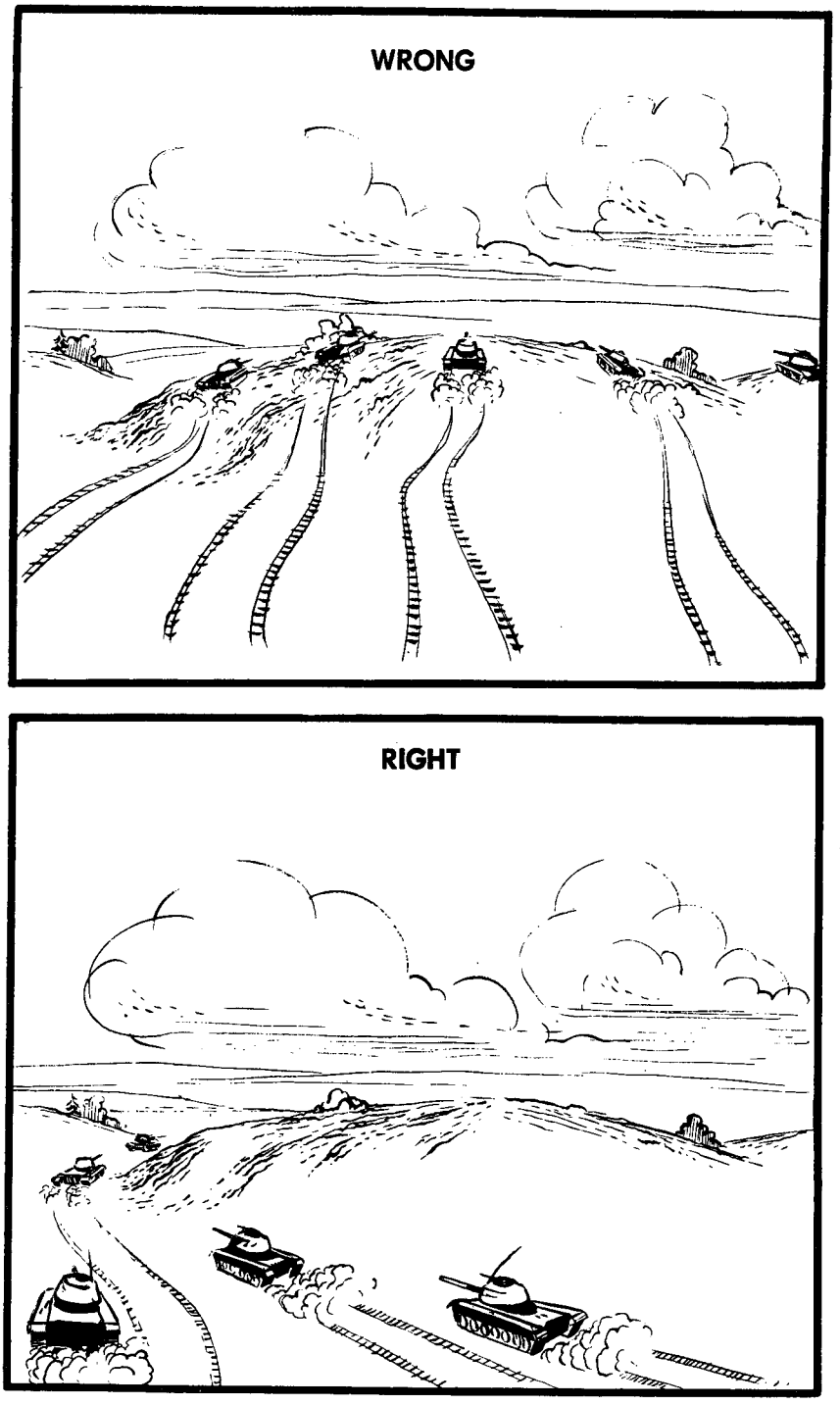

Figure 20. Tanks should move around the shoulders of a hill, using available cover and concealment, while supported by other tanks in firing positions.

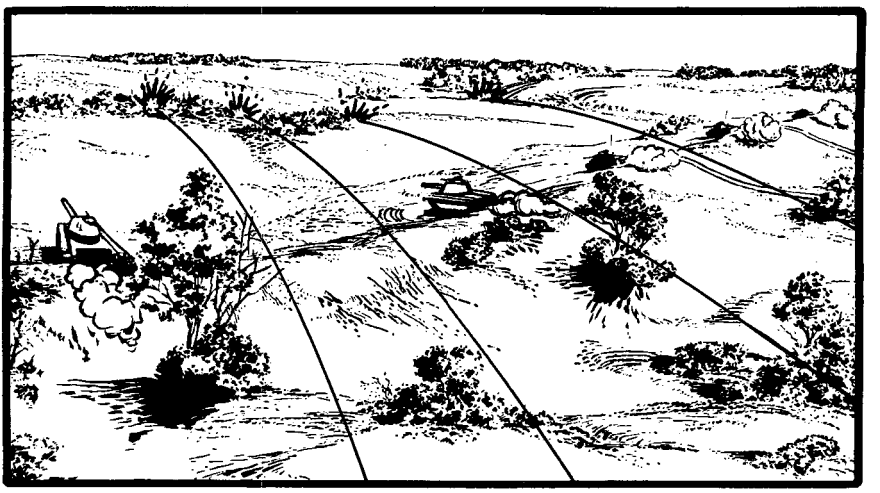

Figure 21. If it is necessary to cross a crest, a tank unit advances in line formation, supported by tanks in firing positions.

58. Movement From Cover, Concealment, or Defilade

The head of a column emerging from a ravine, woods, or defile should be protected by other tanks, halted in concealed positions to provide fire support (fig. 27).

59. Terrain Unfavorable for Tanks

Tank crew members must learn to recognize unfavorable terrain at a distance. If the terrain is doubtful, a crew member should be dismounted, under protection of the tank weapons, to see whether the ground is passable for tanks (fig. 28). Accompanying infantrymen may be used to assist in making this reconnaissance and to provide additional protection for the dismounted crewman.

60. Dusty Terrain

Dusty terrain betrays the movement of tanks (fig. 29). Dust can be minimized by slow movement. Tanks must launch their assault rapidly, regardless of dust.

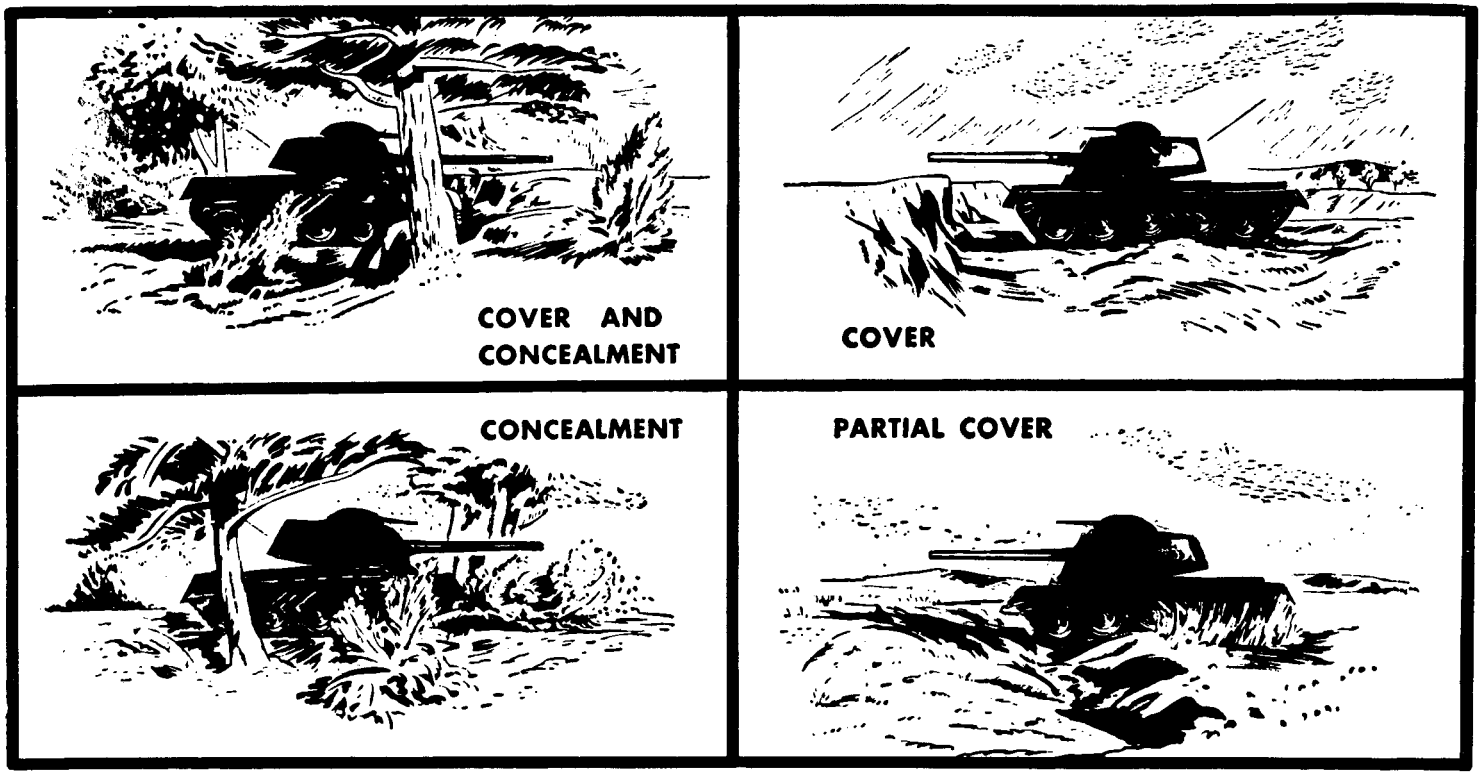

Figure 22. Terrain characteristics in the order of their desirability are cover and concealment, cover, concealment, partial cover.

Figure 23. Brush may provide fairly good concealment.

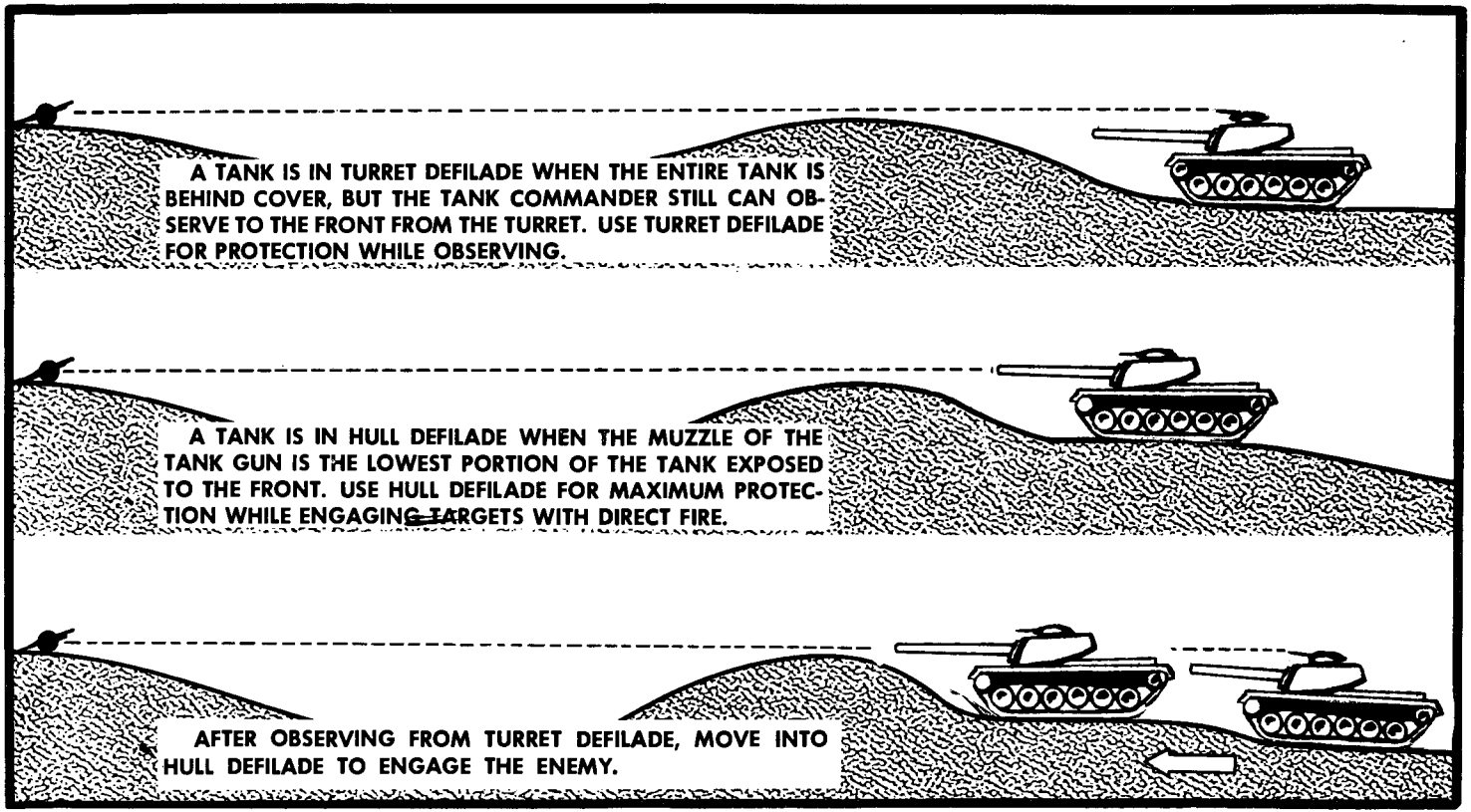

Figure 24. Defiladed positions.

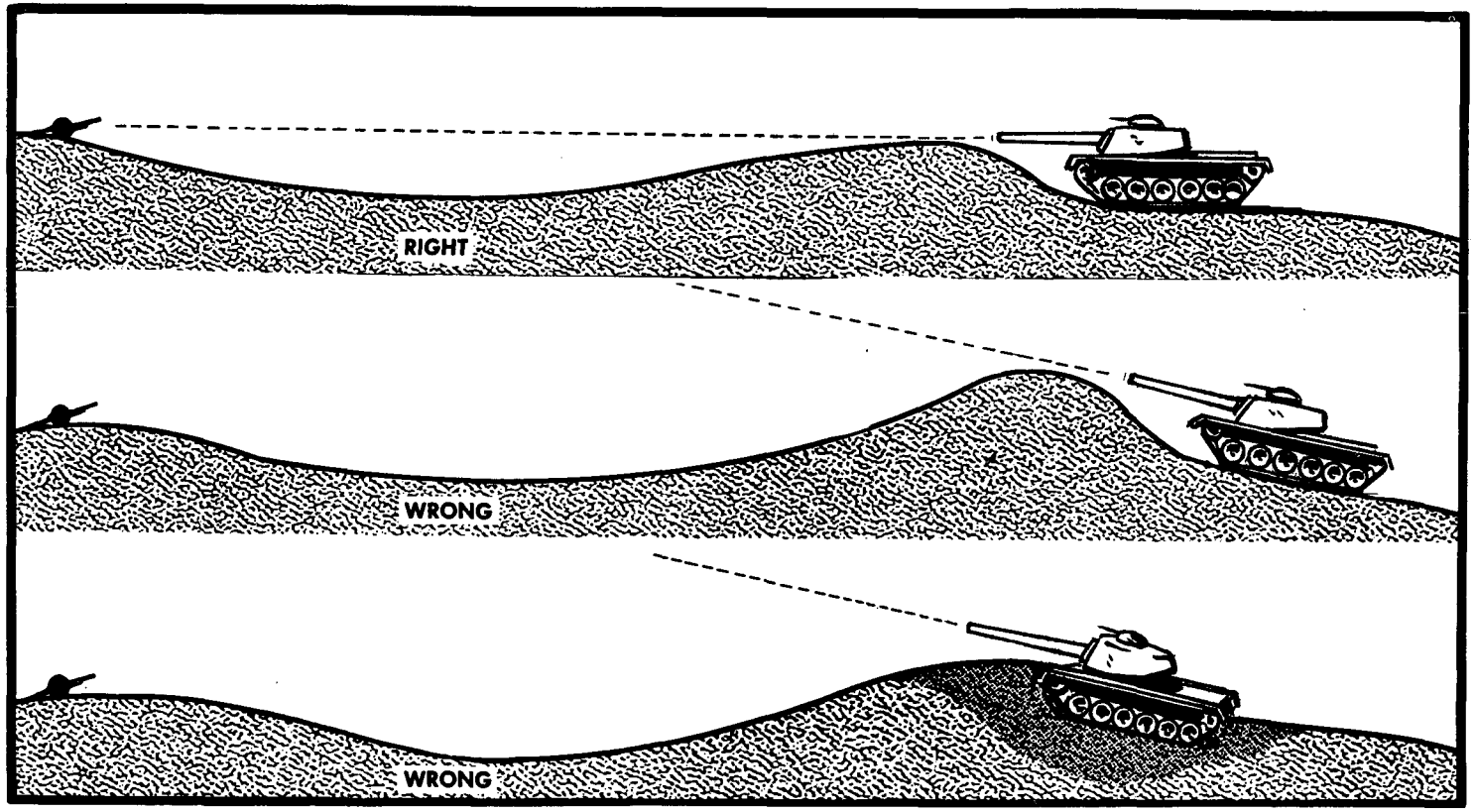

Figure 25. In selecting a hull-defilade position, be sure that the slope is not so steep that the gun muzzle cannot be depressed sufficiently to engage targets. Select a position where the tank does not have an excessive cant or pitch.

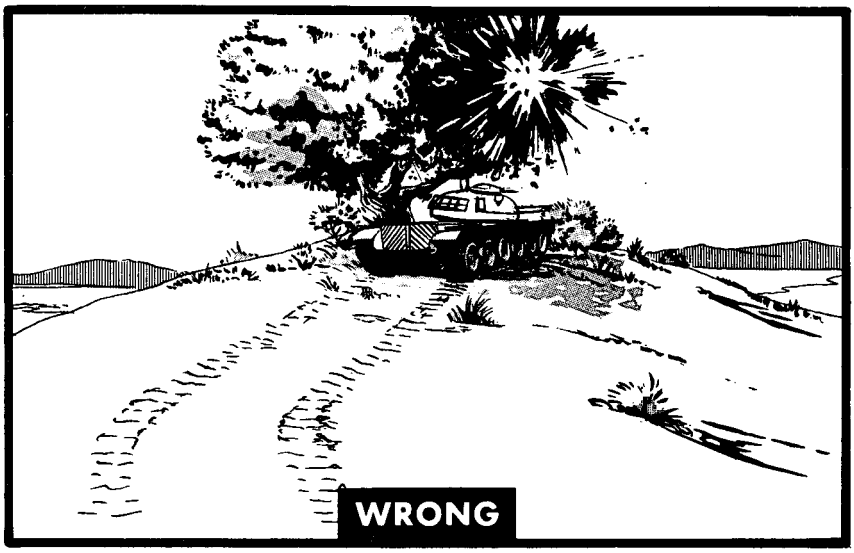

Figure 26. Conspicuous landmarks should be avoided.

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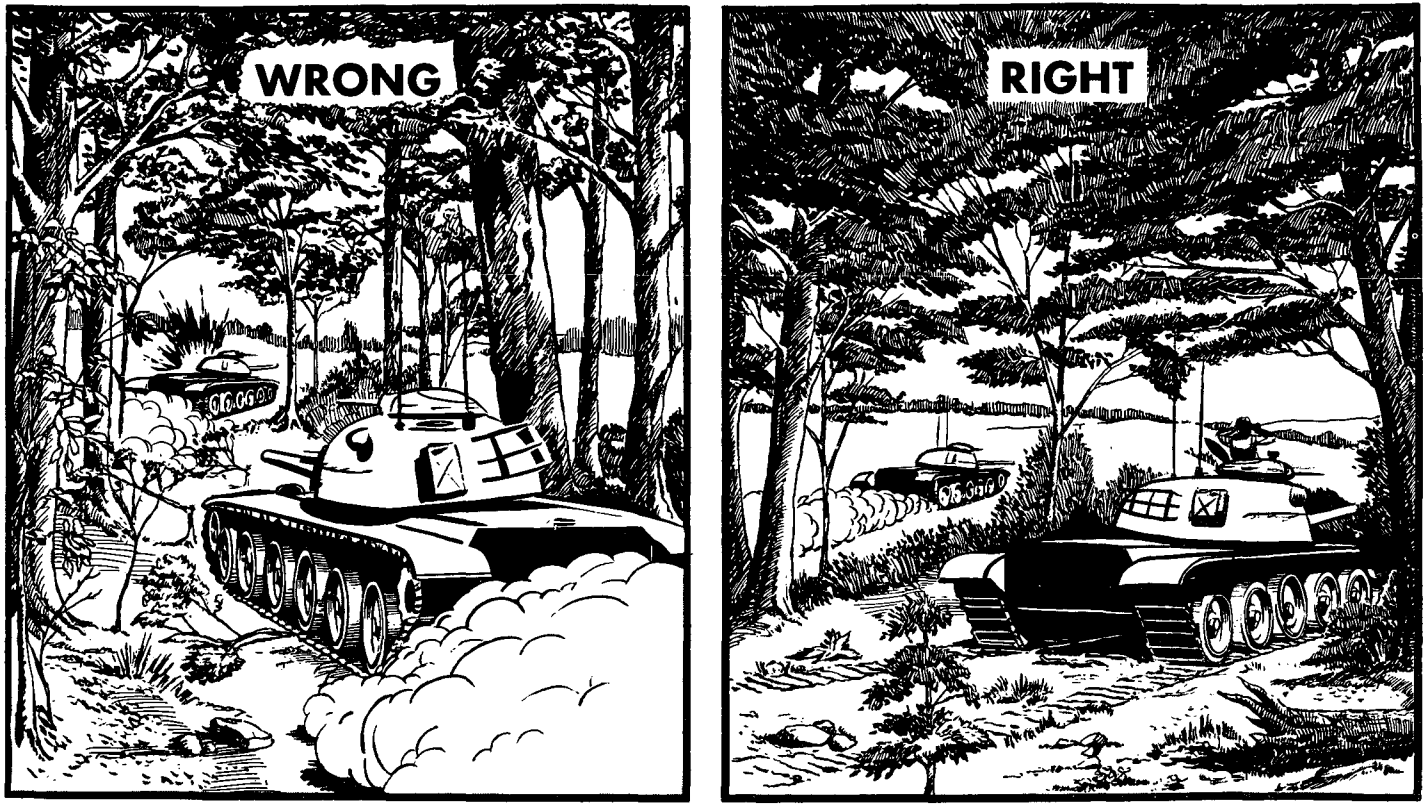

Figure 27. The head of a column emerging from cover, concealment, or a defile should be supported by other tanks, halted in concealed positions to provide fire support.

Figure 28. If the terrain is doubtful, a crew member is dismounted to see whether the ground is passable for tanks.

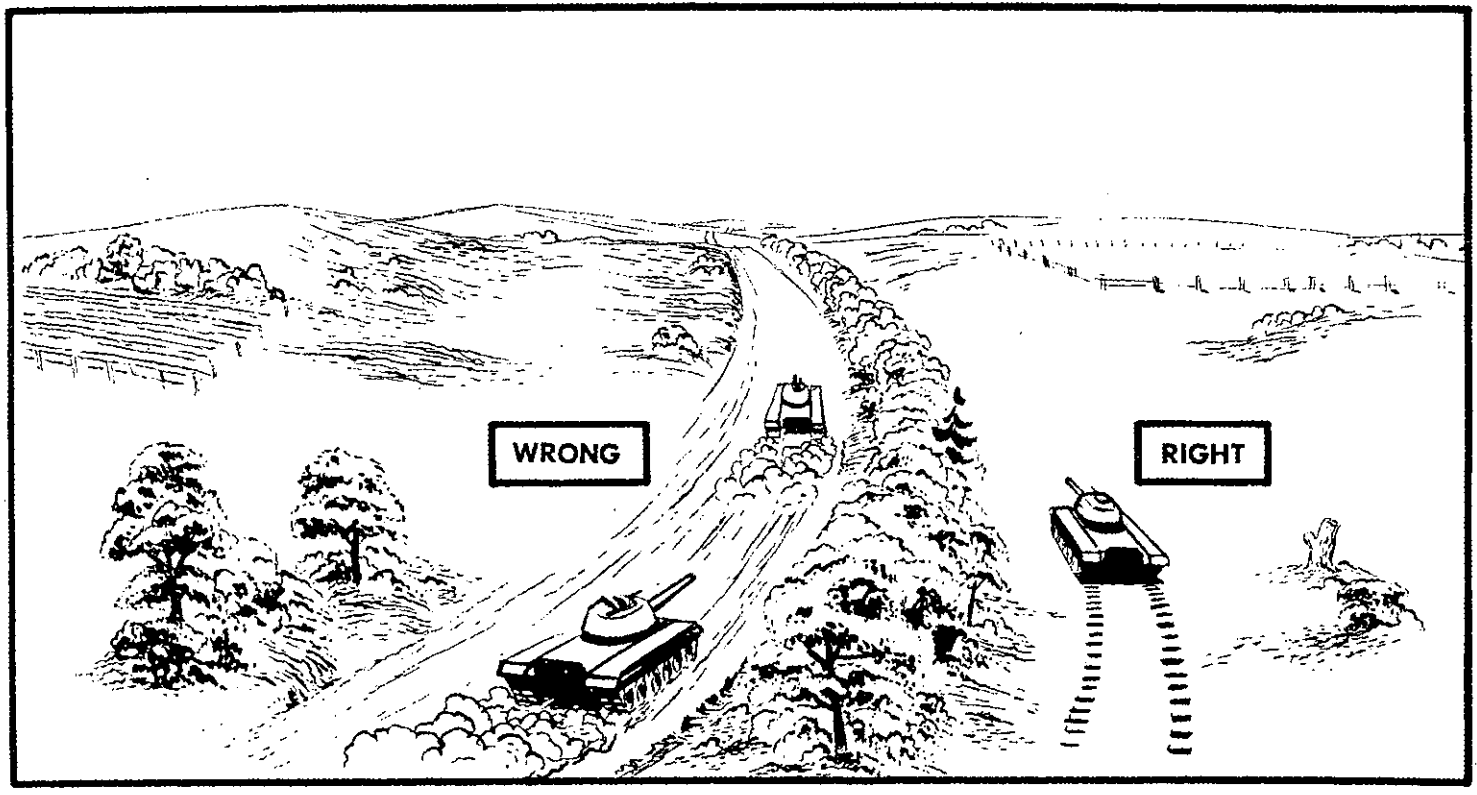

Figure 29. Dusty terrain betrays the movement of tanks and should be avoided where possible.

Section II. USE OF FIREPOWER

61. Selection of Targets

a. Tanks always engage first those targets most likely to interfere with the accomplishment of their mission. While no hard-and-fast rule can be applied, enemy armor commonly offers the greatest threat and, if present, will be the first target to be engaged.

b. Tanks engage enemy armor and automatic weapons. Infantry elements, when attached to tank units, employ infantry tactics of fire and maneuver, and support the tanks by destroying dug-in antitank guns and tank hunters that cannot be engaged by the tanks.

62. Distribution of Fire

Unless the fire of a tank unit is controlled, the tank crews may expend ammunition needlessly and ineffectively. On the other hand, sufficient fire must be delivered to insure destruction or neutralization of the target in the shortest possible time. The tank company commander and the platoon leaders control the distribution and volume of fire. (For methods of attacking targets, see FM 17–12.) The following factors are considered:

a. Aggressive Application of Firepower.

(1) The assigned mission of the unit, the tactical situation, terrain, and observation will dictate when to open fire with the main gun in its direct fire role. The advantage of obtaining a first round hit outweighs any other single factor in determining the winner of an engagement between weapons of comparable destructiveness and range characteristics. This is of particular significance when engaging a numerically superior enemy. Should the first round miss, the initiator of a fire fight can probably fire one or more subsequent shots before receiving hostile return fire. The probability of hitting the target is greater on each successive shot.

(2) In both the attack and defense the first priority for friendly tank fire is the destruction of the most dangerous enemy elements such as tanks and high velocity antitank weapons. At ranges of less than 1,000 meters there is a high probability of achieving a kill on these point targets with the first round. When a dangerous target appears at a range greater than 1,000 meters and because of movement the range is closing, fire should be withheld

until the engagement range becomes more favorable. This tactic is applied only when it is probable that the enemy either cannot "pinpoint" our tank locations or cannot place effective fire on them. If in doubt as to the enemy's capability, the option to fire first should be exercised immediately. When a target appears at a range greater than 1,000 meters and there is no likelihood that the engagement range will close, the target is fired on until it is either destroyed or conditions make it too unprofitable to continue the action.

(3) In retrograde operations where the primary mission is to delay and disorganize the enemy advance, tank elements normally open fire at extended ranges regardless of the enemy's lack of capability to deliver effective antitank fires on our position.

b. Number of Tanks in Position to Fire. When more tanks are in position than are needed to destroy a single target, only those in the most favorable positions will fire (fig. 30). To make this possible, each tank must be assigned a clearly defined, primary sector of responsibility. A company might have only one platoon in action, the others remaining concealed until another target appears. This control may lead the enemy commander to underestimate the force opposing him and thereby produce opportunities for surprise (*g* below).

c. Supporting Units Available.

(1) If supporting units are available to protect its flanks, the tank company concentrates its fire on targets to its front. Otherwise, certain tanks must be designated to watch for targets of opportunity to the flanks and rear.

(2) Supporting artillery and mortars should be employed against distant or large area targets, leaving the tanks free to engage closer targets.

(3) Supporting artillery or mortars should also be employed to provide any smoke the tank company may require.

(4) Davy Crockett weapons should be employed against remunerative nuclear targets, permitting tanks and other supporting fires to be used against targets more appropriate to their capability.

d. Distant Targets. Accuracy of fire decreases with an increase in range. Therefore, the greater the range to a target, the more tanks that must fire on the target to insure its destruction or neutralization.

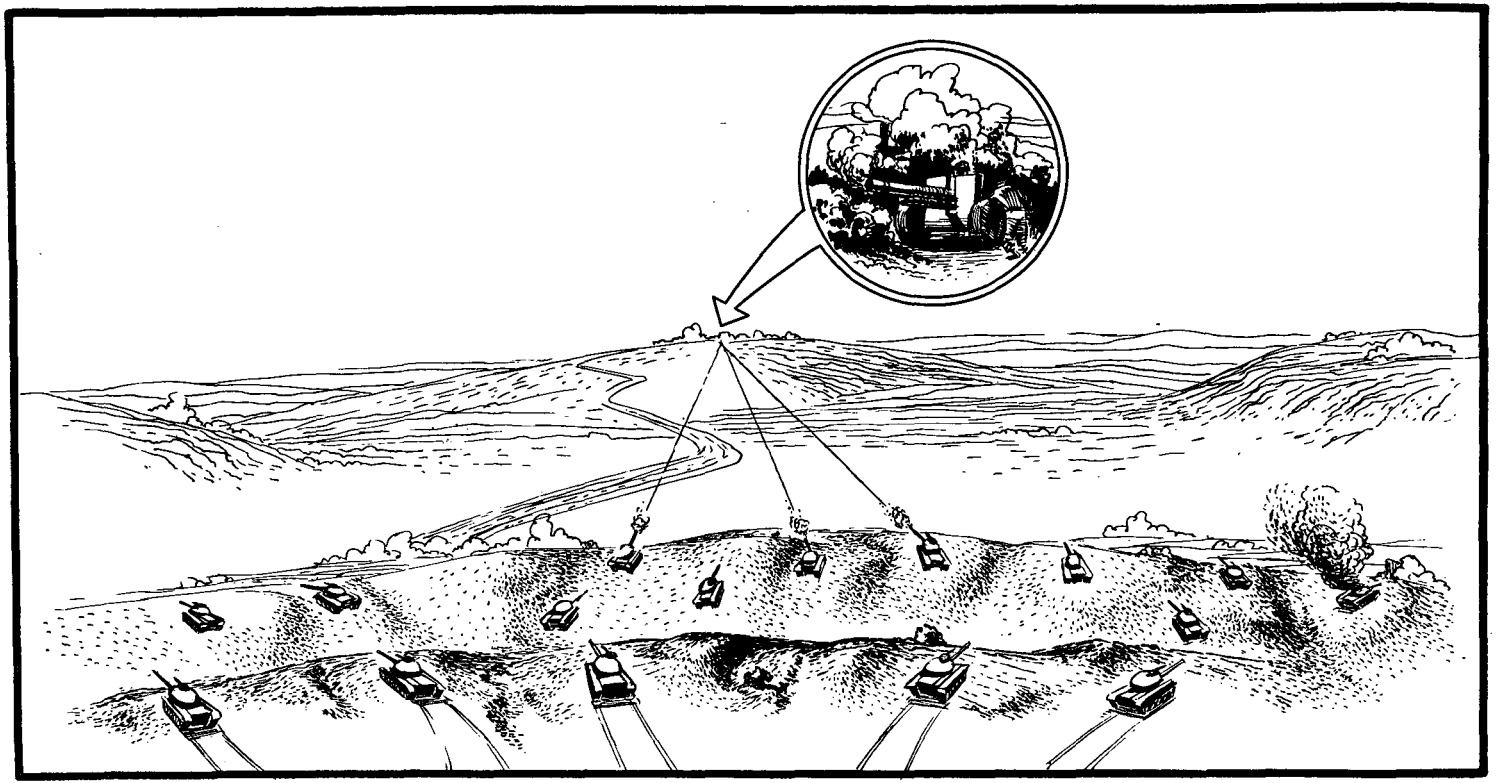

Figure 30. When more tanks are in position than are needed to destroy a single target, only those in the most favorable positions will fire. The other continue to observe in their assigned sectors for new targets.

e. Number of Targets.

(1) When there is more than one important target, fire should be distributed to engage as many targets as possible (fig. 31).

(2) Should a dangerous new target appear at a moment when the entire tank company is engaged, certain tanks must be designated to take it under fire.

(3) If the company does not have sufficient firepower to engage all available targets, it requests assistance from the battalion commander. Such a request may include the type of fire support, such as Davy Crockett, nuclear artillery, or tactical air, considered most appropriate. Meanwhile, the company continues to engage the most dangerous targets.

f. Type of Target.

(1) Generally, the more dangerous a target, the more fire is concentrated upon it.

(2) A target that is hard to see is hard to hit and therefore requires a greater volume of fire than one in the open. For example, a well-concealed antitank gun may be very difficult to destroy or neutralize even though its general location is known.

g. Surprise.

(1) When the tank company is able to surprise an enemy force, each platoon is given a definite sector of fire. The platoon leaders, in turn, designate definite sectors or targets for each tank. All tanks fire together on the company commander's order.

(2) If the company is attacked suddenly, each tank commander immediately engages the most dangerous targets in his assigned sector of fire until the platoon leaders and company commander are able to determine the point or points where fire should be concentrated.

h. Firing Positions for Tanks.

(1) Tanks used for fire support are placed in hull-defilade firing positions. A tank is in hull defilade when the lowest part of the tank visible from the front is the main tank gun. The use of hull defilade provides maximum protection while engaging enemy targets with direct fire.

(2) Firing positions are classified as primary, alternate, and supplementary.

(*a*) A *primary* firing position offers the best conditions for carrying out the assigned mission.

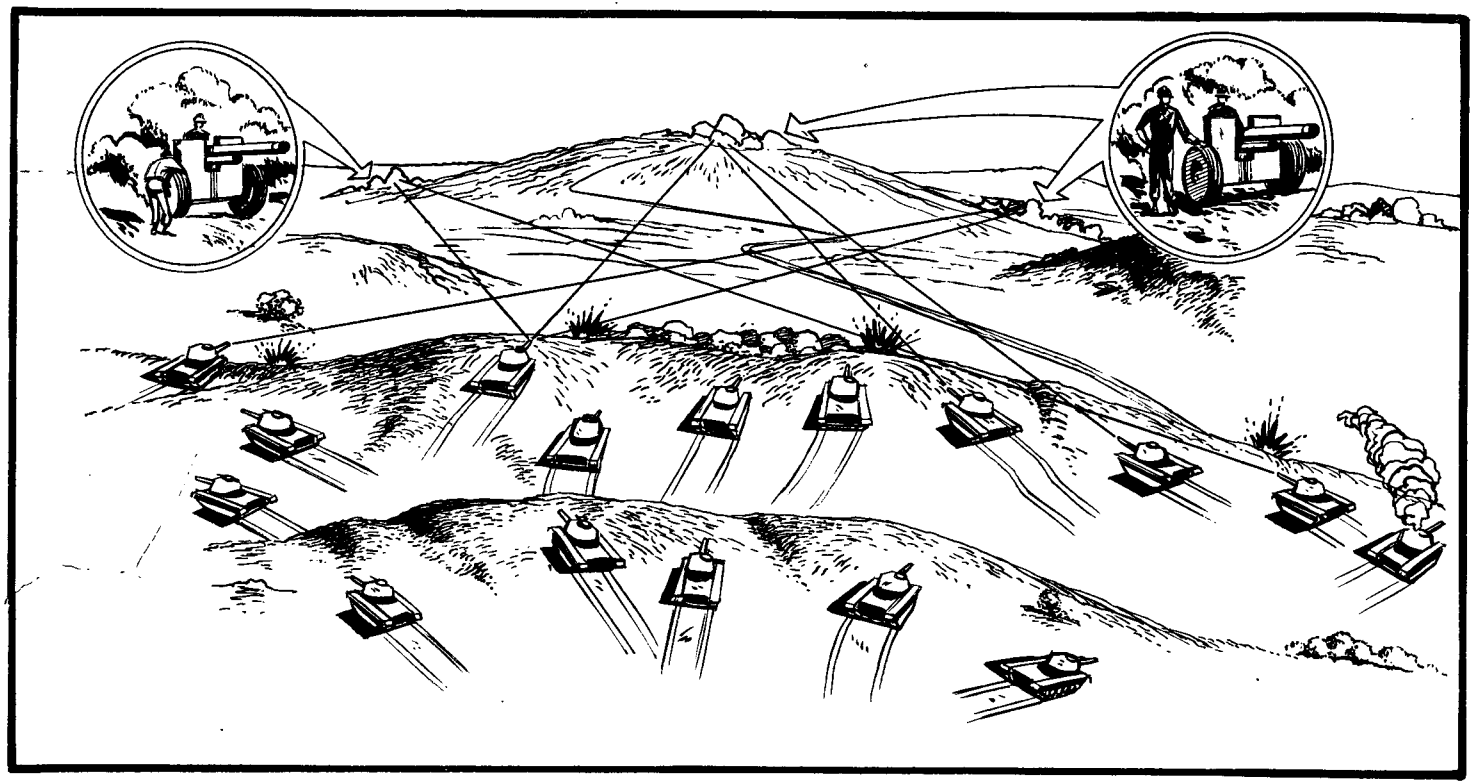

Figure 31. When there is more than one important target, fire is distributed to engage as many targets as possible.

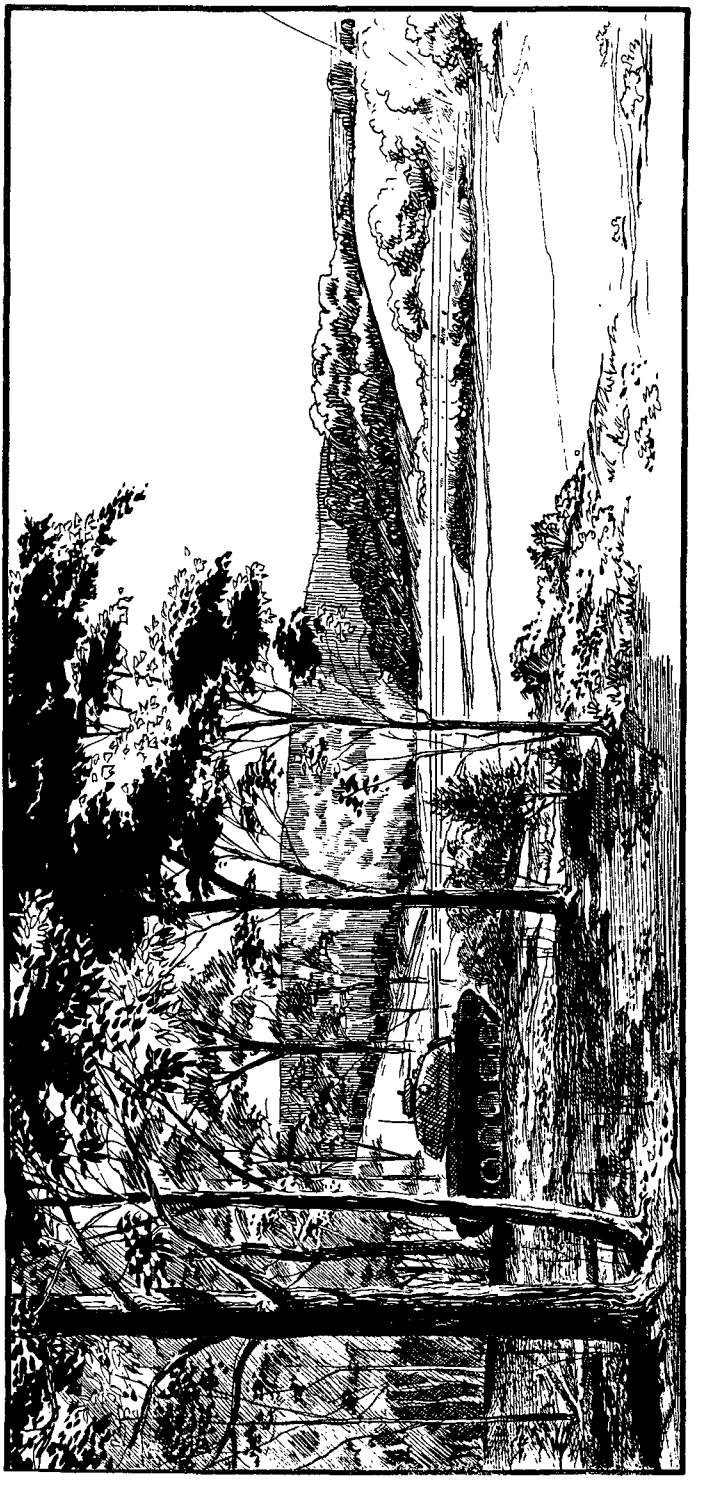

Figure 32. Reconnaissance by fire.

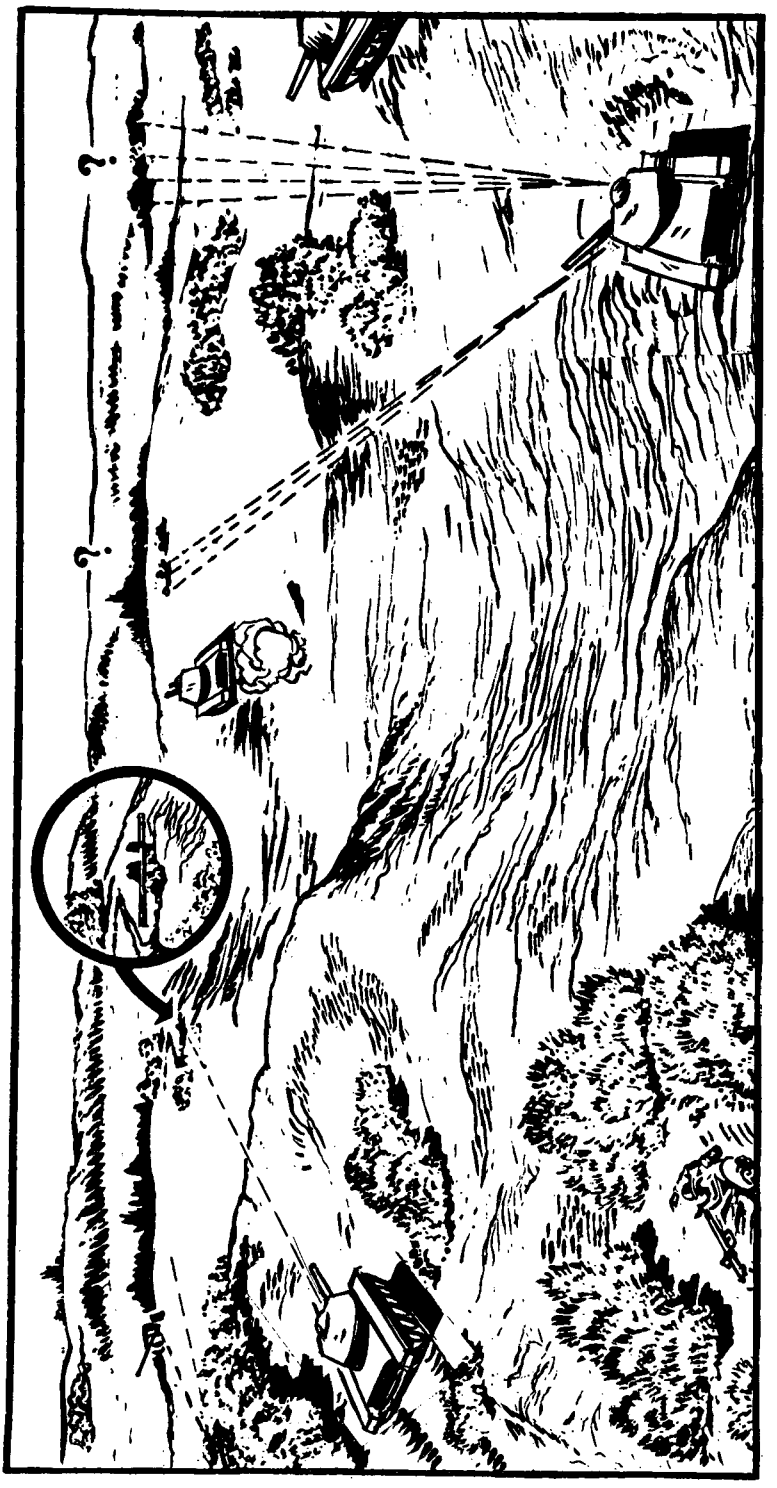

Figure 33. Reconnaissance by fire during the attack.

(*b*) An *alternate* firing position is used for carrying out the assigned mission when the primary position becomes unsuitable.

(*c*) A *supplementary* firing position is used for firing on targets that cannot be reached from the primary or alternate position.

63. Reconnaissance By Fire

a. A tank unit is frequently able to develop the situation and obtain a degree of security and protection from surprise by use of reconnaissance by fire. Elements fire into the general area where enemy positions may be suspected, in an attempt to cause him to disclose his presence by movement or return fire (figs. 32 and 33). The coaxial and cupola machineguns are used at short ranges, the tank gun at longer ranges. The tank commander watches the strike and picks up movements of the enemy or the exact location of a gun returning the fire.

b. Reconnaissance by fire is not conducted so as to disclose prematurely the tank position. However, during the attack, tanks make liberal use of fire to locate and neutralize suspected enemy weapons. This is not to imply an indiscriminate use of ammunition.

Section III. ACTIONS AGAINST TROOPS

64. General

Tanks can overrun and crush enemy crew-served weapons, shallow entrenchments, personnel, and light vehicles. When combined with fire and rapid movement, his capability can be employed advantageously by tank units attacking dismounted enemy.

65. Attack Against Moving Troops

In fast-moving, fluid situations, especially during exploitations, tank units may encounter marching formations of enemy troops who are unaware of the immediate presence of tanks.

a. If the attacking tanks have the advantages of high ground and good fields of fire, they may take initial positions to rake the enemy formation with fire. Normally, this surprise fire is of short duration (2 or 3 bursts of machinegun fire and 1 or 2 rounds from each main tank gun). It is designed to kill as many enemy troops as possible before they can take cover. As soon as the tank unit commander sees that maximum advantage has been gained from this initial surprise fire, he orders his units to attack the enemy

with as much speed and violence as possible. The unit advances, machineguns firing, directly into the enemy formation, employing essentially the same tactics used in the final assault of any objective.

b. If the attacking unit is not in a position to take the enemy under surprise fire from a vantage point, the tank unit rapidly moves into a combat formation that will allow maximum firepower forward and attacks directly into the enemy formation, preferably from a flank.

66. Attack on Concentrations of Troops

Whenever the enemy has concentrations of troops, such as in assembly areas and attack positions, he can be expected to take security precautions to prevent the surprise attack of his main body. When such a concentration is encountered, attacking tank units must depend on rapid movement to inflict the maximum shock effect on the enemy. The commander must quickly plan his attack, transmit orders by radio, and assault without halting. One or more elements of the attacking force should move on line directly into the enemy formation, machineguns firing. At least one element should be given the mission of enveloping the enemy and take advantage of any exposed flank.

67. Attack Against Troops in Fixed Positions

Dismounted enemy defending a fixed position can be expected to have antitank weapons and mines sited to cover likely avenues of armor approach. In the attack of such a position, tanks should be accompanied by infantry elements. Once the antitank defenses have been disposed of and the enemy defenses have been penetrated, tanks should move into and through the enemy position rapidly, machinegunning and crushing the enemy in foxholes and other defensive works that can be overrun.

Section IV. ACTIONS AGAINST TANKS AND ANTITANK WEAPONS

68. Tank Versus Tank—General

a. The material presented in this and the following paragraphs applies to the engagement of enemy tanks and armored self-propelled weapons.

b. Tank crewmen must be prepared to:

(1) Engage enemy tanks at any time, usually with little warning.

(2) Strike concentrations of hostile armor, by either attack or counterattack, to destroy the enemy's power for offensive combat.

c. Tank design is a compromise of the desired degrees of armor protection, cross-country mobility, firepower, speed, and crew and stowage space. Consequently, a type of tank possessing any one or more of these characteristics to an unusual degree will be below average in others. For example, a tank carrying extremely thick armor and heavy armament will be slow and difficult to maneuver, and the larger the caliber of a tank's gun, usually, the fewer rounds of ammunition it can carry. It is probable that some types of enemy tanks will possess outstanding characteristics but at the same time will be particularly vulnerable in some respects. Tank crewmen must study the different types of hostile armored vehicles, learn their respective strengths and weaknesses, and develop techniques to defeat each type.

d. Tank crewmen must be able to determine at a glance whether a tank is friendly or enemy. This will insure that enemy tanks are engaged immediately and friendly tanks are not fired upon. All tankers must be trained in recognition of both friendly and enemy tanks and other armored vehicles.

69. Tanks in the Antitank Role

a. General. The tank is the primary antitank weapon in the armored, and mechanized divisions. Other antitank weapons systems and passive measures, such as antitank obstacles are also employed, but they do not possess the tank characteristics of mobility and armor protected firepower. The tank is the principal means for *destroying* enemy armor (fig. 34).

b. Action Against Enemy Armor. In an attack against enemy armor, tank units use fire, movement, and deception to permit the employment of their weapons at the most effective ranges and from the most effective positions. All available cover and concealment must be used; smoke may be employed to blind the enemy and to screen movements.

70. Tank Versus Tank—Action

a. Surprise may be attained by rapidly launching an attack against enemy tank elements when and where they least expect to be attacked. Effective reconnaissance determines where the weakest or least secure part of the enemy formation is located.

b. Artillery and nuclear fire support should be used in conjunction with the tank attack. This attack usually should be

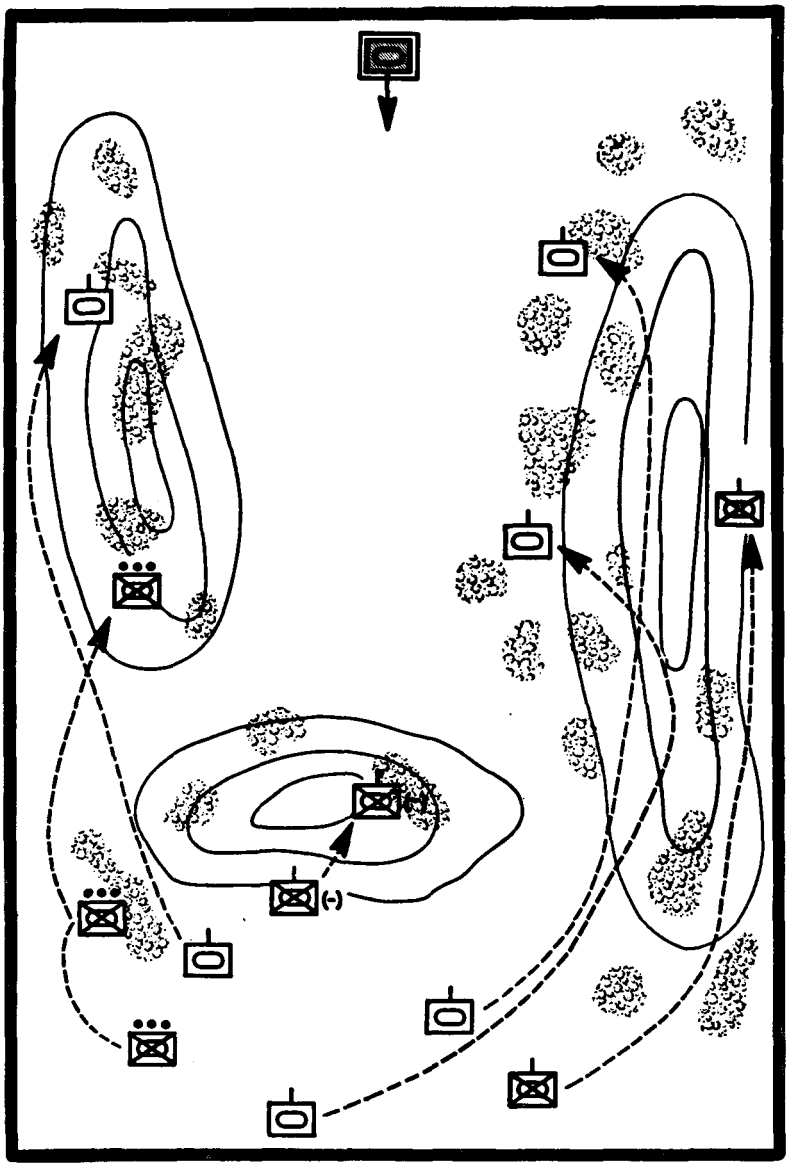

Figure 34. Active utilization of fire and maneuver by tanks is the primary means available to commanders for destroying hostile armor.

directed against the hostile flanks. Aggressive maneuvering and accurate fire are combined into a violent and continuous attack (fig. 35).

(1) Nuclear fire breaks up and destroys the enemy formations and isolates parts of the hostile force so that it can be

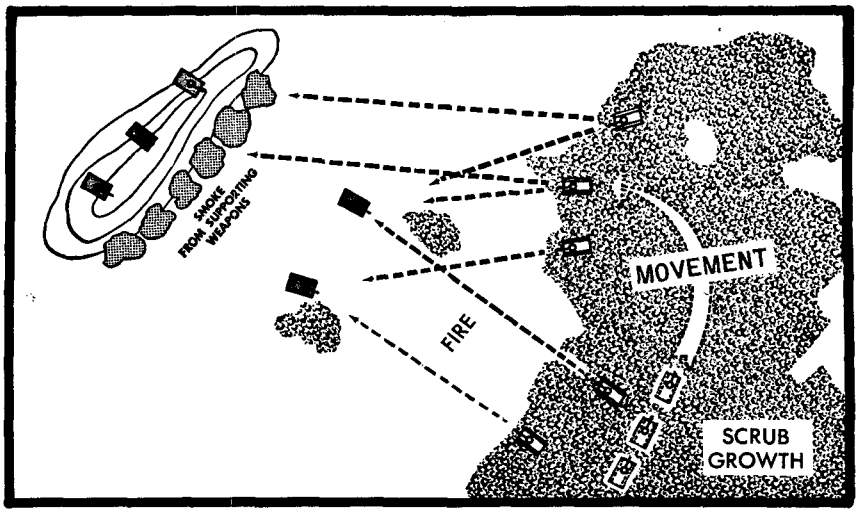

Figure 35. Aggressive maneuvering and accurate fire, combined with fire support from available weapons, should be used when fighting enemy tanks.

destroyed in detail. Artillery and mortar fires causes tanks to button up, impedes their progress, and makes them more vulnerable to direct fire.

(2) Under favorable conditions, smoke can be highly effective. However, care must be exercised, because a slight change in the wind may shift the smoke to the enemy's advantage.

(3) In an attack against enemy tanks, some friendly tank elements may be employed in an overwatching role to pin down enemy tanks by direct fire while the remainder of the force closes with the enemy.

c. Requests should be submitted for air strikes on enemy tank concentrations. These air strikes should be carefully coordinated with artillery fires and the attack of the maneuvering force.

d. On occasion, it will be possible for a tank platoon or company to ambush enemy tanks with flanking fire from covered or concealed positions. On such occasions, each tank is assigned a definite target or sector. All tanks open fire together on order (fig. 36).

(1) The enemy is subjected to several aimed shots before he can recover and return the fire.

(2) As soon as the first effect of surprise is over, fire and movement is begun against the surviving enemy tanks.

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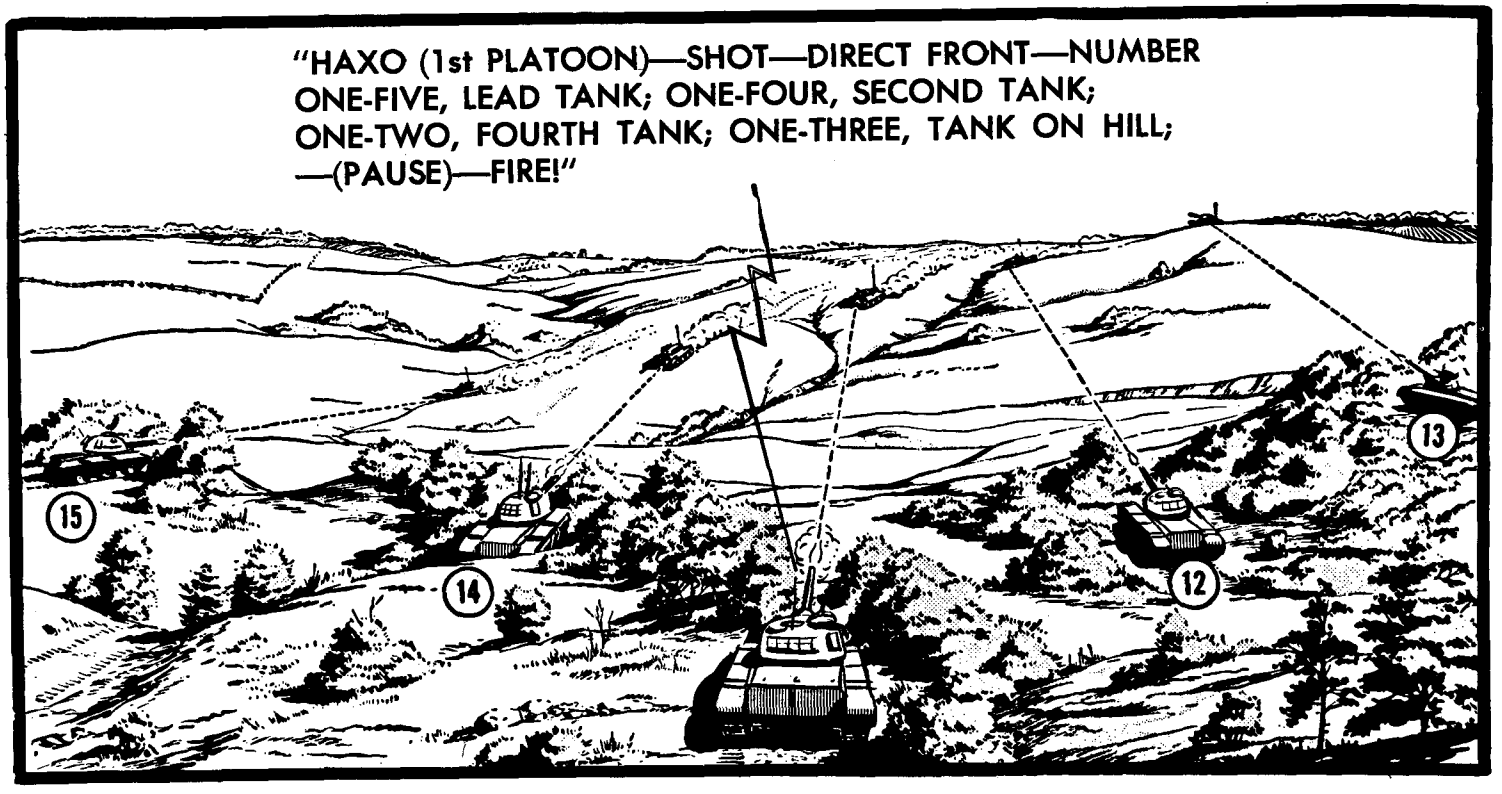

Figure 36. When engaging enemy tanks, the commander assigns each of his tanks a definite target or sector.

This part of the action must be planned in advance, so that the attack is immediate and violent.

e. When it is possible to ambush enemy tanks in a defile, the rear and lead tanks should be destroyed first to entrap remaining enemy tanks and restrict their movement. Fire and movement should be employed against the surviving enemy tanks.

71. Tank Versus Tank—Weapons and Ammunition

a. If the guns of the enemy tanks are inferior, the friendly tanks can keep just beyond their effective range and destroy them. In the attack of an enemy whose armament is superior, supporting artillery may fire HE and smoke, and tanks may fire WP, to blind and confuse the enemy while the attacking force closes rapidly to effective range (fig. 37). Fire should be directed at the side or rear of an enemy tank if possible. If WP is not available, tanks may fire HE.

b. A chemical energy projectile's (HEAT or HEP) armor defeating capability does not decrease with a loss in velocity; therefore, it is equally as effective at all ranges.

c. A kinetic energy projectile (APDS, HVAP, and APC) is effective only if it completely penetrates the enemy armor. Therefore, when using this type of projectile, enemy tanks should, whenever possible, be engaged at a range that insures penetration. The sides and rear of the enemy tank are weaker than its frontal plates, and can be penetrated at longer range.

d. HE may be effective against the tracks and suspension systems of enemy tanks at maximum range (fig. 38).

e. WP has a demoralizing effect on tank crews. It may be employed to blind individual tanks or to set fire to those that have previously been damaged.

f. If heavy enemy tanks must be engaged at a range that does not insure peneration, a concentration of fire is placed on each tank to retard its advance, set it afire, make its fire ineffective, and provide an opportunity for friendly tanks to maneuver into an advantageous position. HE, WP, and machinegun fire harass the crews, force them to button up, and blind them. While the enemy tanks are being engaged with this fire, friendly tanks close to a range from which they can destroy the hostile vehicles.

g. See FM 17–12.

72. Tank Versus Tank—Distribution of Fire

a. If the enemy tanks are superior in number, friendly tanks on

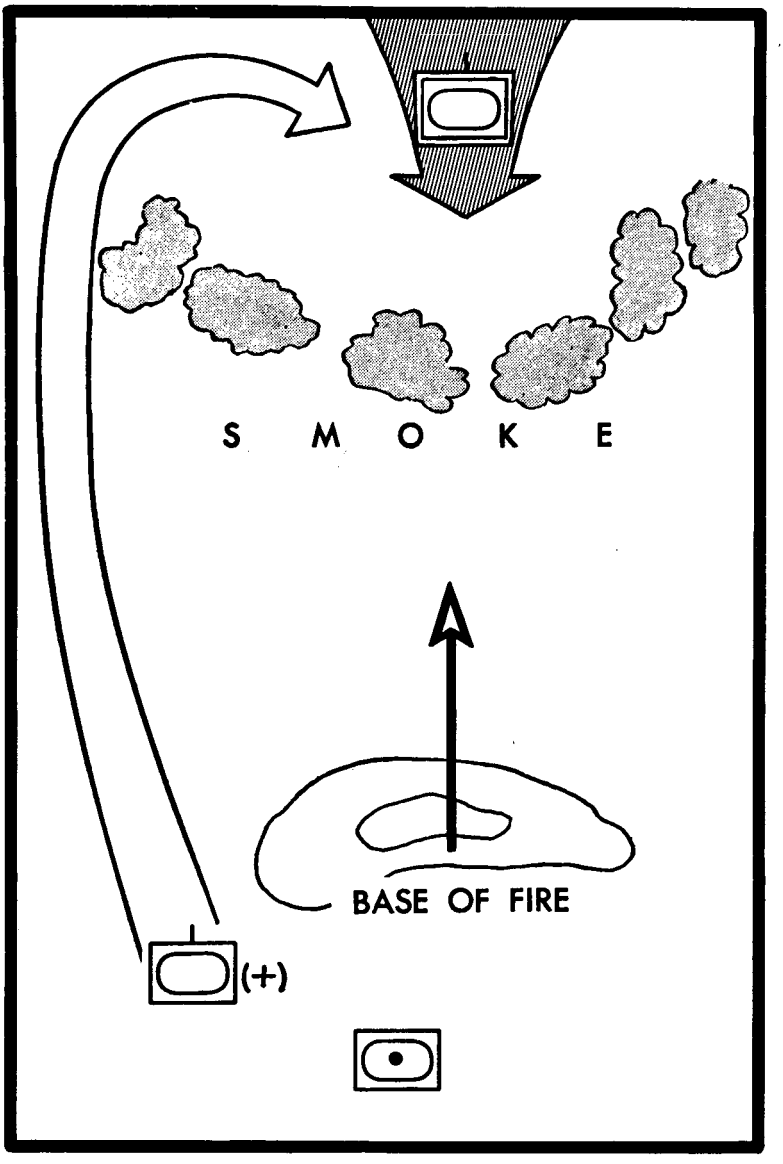

Figure 37. Smoke may be used to blind enemy tanks while the attacking force closes rapidly to effective range, maneuvering to hit the enemy tanks in the flank or rear if possible.

the flanks fire on the enemy's flank tanks and then shift their fire toward the enemy's center, while friendly center tanks initially fire on the enemy's center tanks and then shift their fire to the hostile flanks. This insures that all hostile tanks are taken under

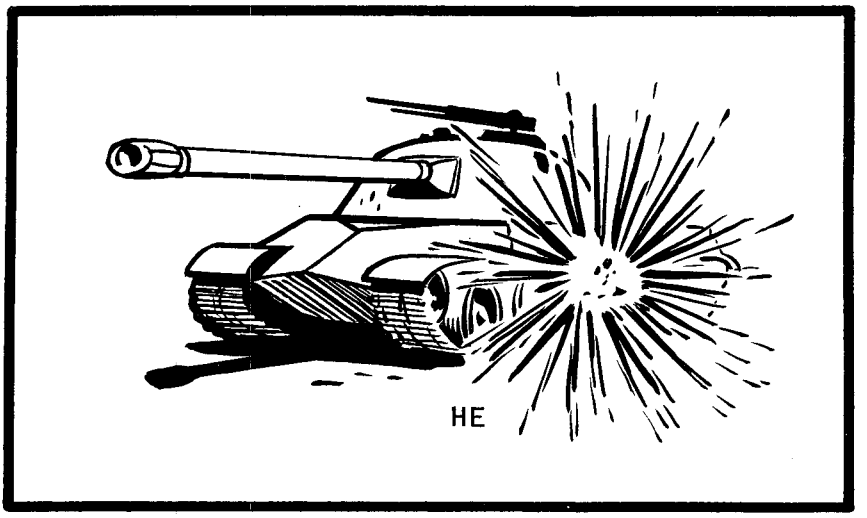

Figure 38. Tank gun HE may be effective against tracks and suspension systems.

fire and kept under continuous fire. Another method is to smoke some of the enemy tanks and concentrate fire on the others.

b. If the enemy is outnumbered, fire should be massed upon his tanks. This may be accomplished by:

(1) Ordering several friendly tanks to engage each hostile tank until it is destroyed.

(2) Engaging each enemy tank with one friendly tank, while concentrating the fire of the rest of the friendly tanks on successive enemy tanks.

73. Antitank (AT) Guns—General

a. Enemy AT gun positions can be expected to have good fields of fire, observation, cover and concealment, and will be protected by mines, other obstacles, and infantry. Guns encountered in open terrain may be dug into hedgerows, open fields, clumps of brush, or farm building. Guns in rolling or broken terrain may be in partial defilade, on reverse slopes, or on hill crests. Both towed and self-propelled guns may have one or more alternate and supplementary positions.

b. Antitank guns seldom operate alone. The organization of their positions usually provides for flanking fire, mutual support, and defense in depth. Infantry with machineguns and rocket launchers protect their positions from surprise, while mines and other obstacles may be used to canalize friendly tanks into the antitank guns' fields of fire.

(1) Flanking fire must be expected, as the enemy usually attempts to locate his guns in positions from which they can fire on the lightly armored sides and rears of passing tanks.

(2) Mutual support by antitank guns makes it difficult to attack any one of them without coming under the fire of one or more of the others. Their combined fire covers all logical approaches, and they are placed so that they can protect one another. Each gun usually is able to fire at the side or rear of a tank attacking another gun (fig. 39).

c. The antitank defense is flexible. Self-propelled guns shift from position to position, maneuvering around the emplaced towed guns.

d. Deception is an essential part of antitank defense. A light gun in the rear of the position may open fire first to draw the tanks into the flanking fire of heavier forward guns. Guns on reverse slopes fire into the rear of tanks that have passed their position. Dummy positions may be set up.

74. Attack of Antitank Guns

a. Direct fire is employed against enemy antitank gun positions whenever possible. Although it is desirable to attack antitank weapons by maneuvering to their flanks or rear, the maneuvering force must be careful not to become engaged with other antitank guns that are mutually supporting those being attacked. Smoke is used to blind hostile gun crews, and HE and machinegun fire is used to destroy or neutralize them (fig. 40). Because enemy antitank guns are often protected by mines, tanks normally do not overrun the guns, but destroy them with short range HE fire (fig. 41). Attached mechanized or infantry elements may assist by locating enemy tanks and self-propelled guns and designating them as targets to the tanks. When unarmored antitank guns are so positioned that tanks cannot destroy them, attached infantry dismounted move in, supported by tank fire, and destroy the crews with infantry weapons (fig. 42).

b. Tanks engage self-propelled antitank guns as if they were enemy tanks. Towed guns caught moving are practically helpless. Tanks immediately destroy them by fire, machinegunning and overrunning their crews.

75. Attack of Artillery Positions

a. Enemy artillery positions normally well be encountered immediately in rear of the hostile defensive positions. The destruc-

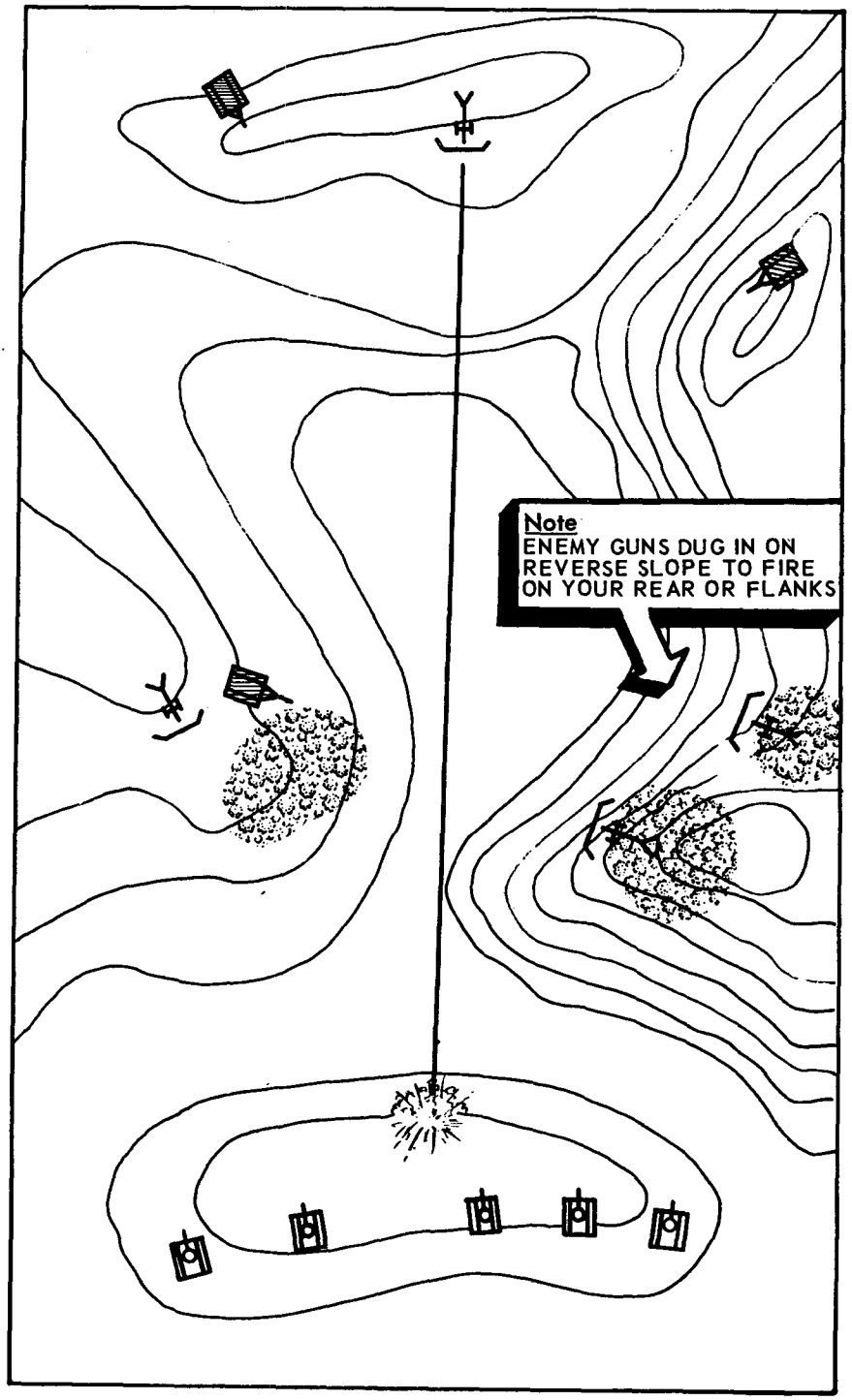

Figure 39. Enemy antitank defenses usually are organized in depth. The first gun to fire may not be the nearest one.

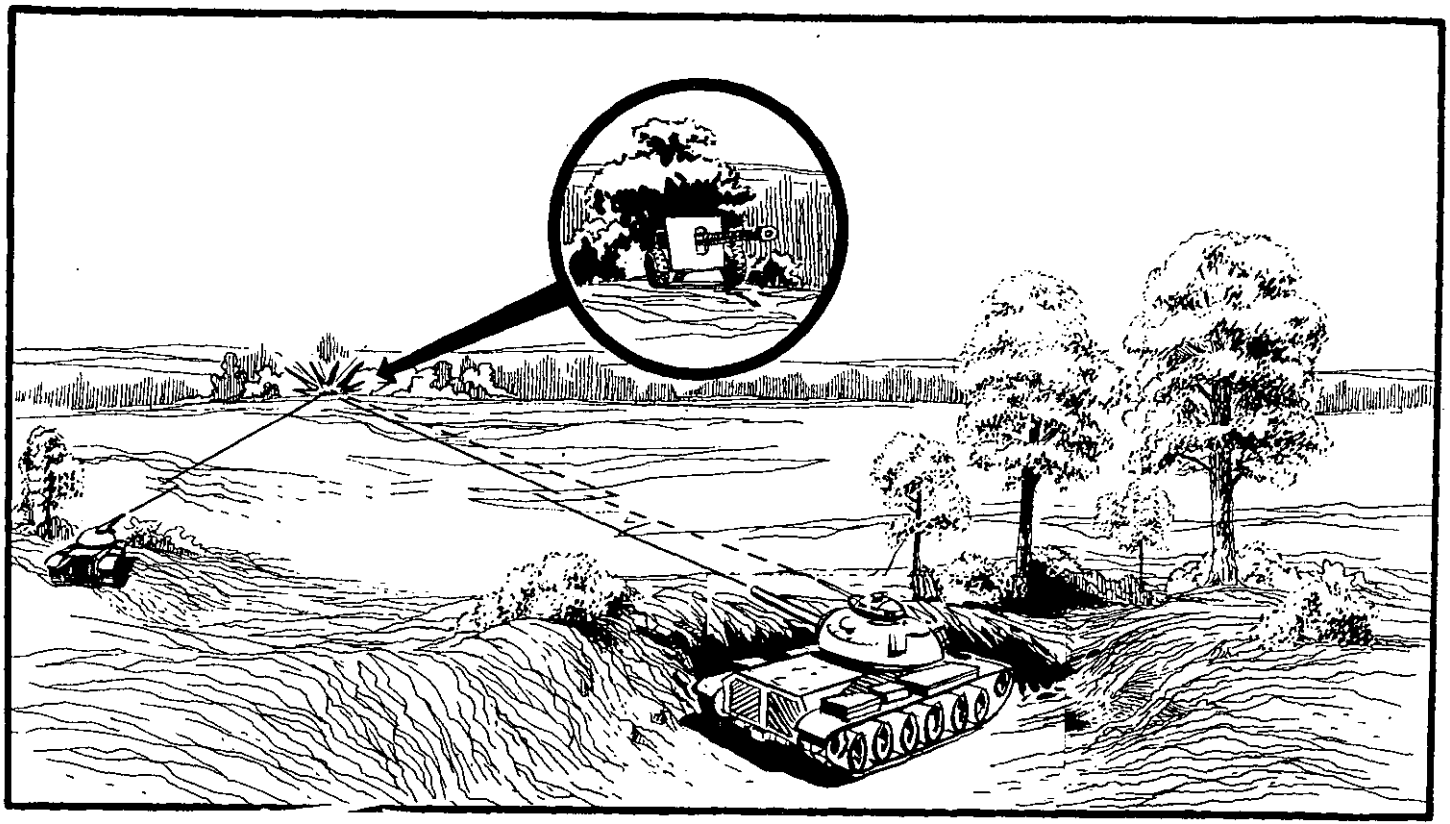

Figure 40. In attacking enemy antitank guns, tank gun HE, machineguns, and the mobility of the tank are used.

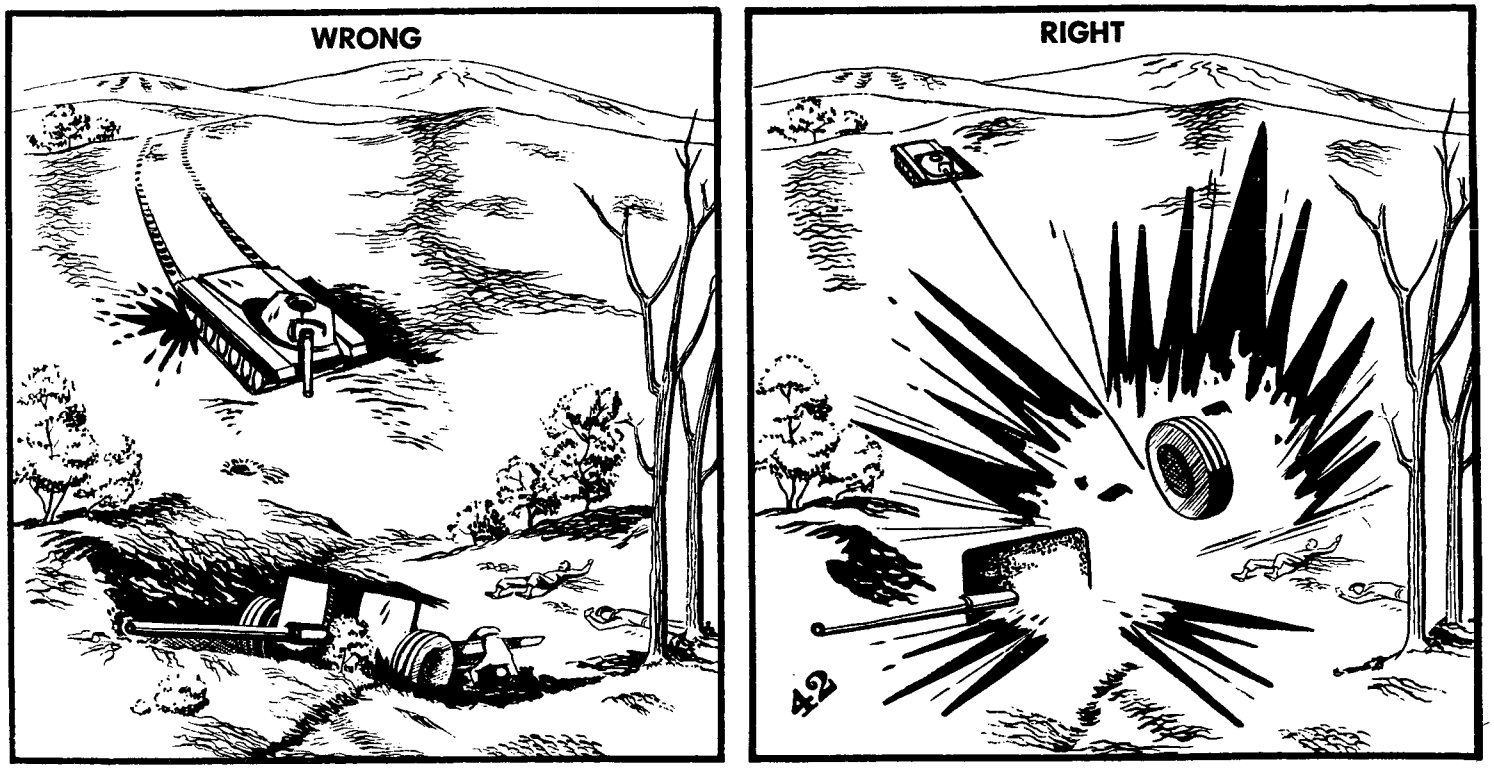

Figure 41. Because antitank gun positions may be protected by mines, they should not be overrun recklessly.

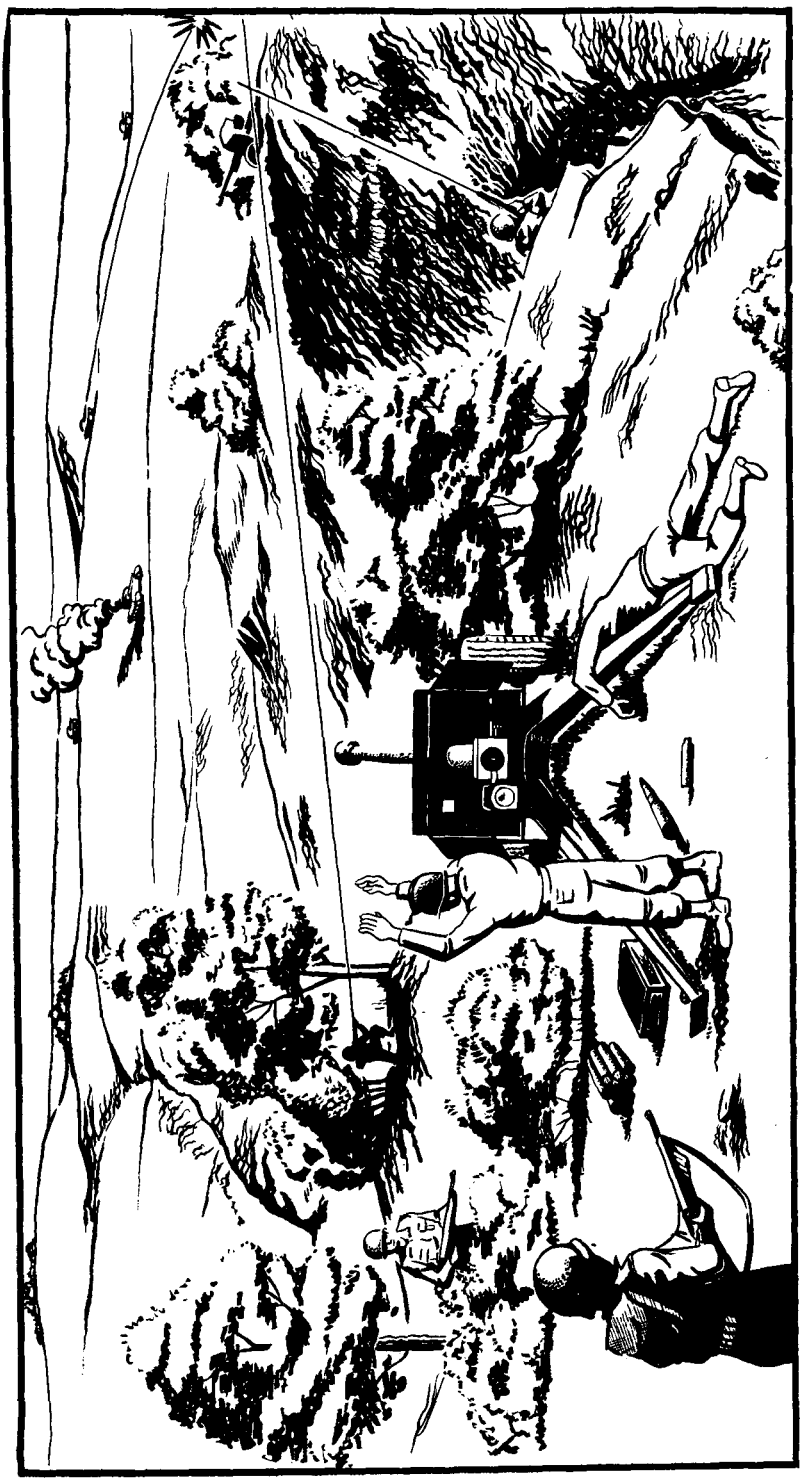

Figure 42. Infantry attacking hastily occupied enemy antitank gun positions.

tion of this artillery materially assists a breakthrough, as the enemy will attempt to employ it for both direct and indirect fire against the advancing tanks.

b. The tank company employs fire and movement against enemy artillery. Towed artillery is at a disadvantage when attacked from the flanks and rear, or when caught moving. Tanks engage self-propelled artillery as they would enemy tanks, taking advantage of the relatively limited traverse that characterizes most armored artillery. Enemy heavy artillery, whether self-propelled or towed, is slow and difficult to maneuver and therefore vulnerable to tank assaults when surprised.

76. Individual Antitank Measures

Individual antitank measures include all means employed by dismounted soldiers to destroy tanks or their crews. A courageous infantryman, equipped for such action, may be fully as dangerous as an antitank gun.

a. When the tanks are supported by infantry elements, the infantry protect the tanks from such measures by machinegun and rifle fire and close combat.

b. When the leading element of the attack consists of tanks alone, one or more of the following methods may be used.

(1) The supporting element watches the area immediately around the tanks, placing machinegun fire on anything that moves in their vicinity.

(2) The advancing tanks use coaxial machineguns to neutralize possible rocket-launcher positions and to keep foot troops down and away from them. HE may be used against dug-in personnel. Flamethrowers, if available, are excellent for this work.

(3) The advancing tanks also protect themselves by adopting a formation that enables each tank to cover the front or the flank and rear of another.

(4) The advance of the leading tanks may be covered by artillery airbursts.

CHAPTER 4
METHODS AND TECHNIQUES OF EMPLOYING TANKS AND MECHANIZED INFANTRY

77. General

a. Tank and mechanized infantry units normally conduct offensive operations as battalion task forces and company teams. This chapter sets forth basic principles, methods, and techniques for the joint employment of tank and mechanized infantry elements. In the conduct of the attack, the ideal to be achieved is to have the arrival of the tank and mechanized infantry elements at the objective be so timed as to attain the maximum effects of shock action and armor protected firepower inherent in the combined arms team. Within the context of this chapter and its discussion of combined arms forces, the term "mechanized infantry" refers to carrier-mounted infantrymen; if the mechanized infantrymen are dismounted, it will be so noted in the discussion. The techniques used by infantry are equally applicable to mechanized infantry elements operating dismounted as part of the tank-infantry team.

b. In fast moving situations the advance of tanks and mechanized infantry can be coordinated by combining the combat formations of each into one mutually supporting formation—tanks preceding mechanized infantry with the entire attacking force moving forward together. The selection of the attack formation for the tanks and mechanized infantry will be based on considerations of the mission, enemy situation, and terrain and troops available as well as on the firepower, security, and control desired by the commander in a given action.

c. In slower moving situations, when the tanks are advancing from one covered position to another, the mechanized infantry may be moved by bounds behind the tanks. Movement by bounds increases the security of the mechanzed infantry and reduces the time they are exposed to direct-fire weapons. If the tanks are moving in mass, mechanized infantry usually will follow, by bounds, 1 or 2 covered positions to the rear. If the tanks are moving by bounds, mechanized infantry will usually occupy a defilade position behind the rearmost tank elements. In either

event, the speed of movement of the mechanized infantry element must be regulated by the force commander to insure that it is in a position to join the tanks in the assault on the objective.

d. The maneuver force moves in mass without halting. It moves rapidly toward the objective using the selected method of attack. When compelled by enemy action, terrain, or insufficient fires from the base of fire, the force advances by fire and movement. See paragraphs 121–127 for a detailed discussion on conduct of the attack.

78. Basic Principles

a. Because tanks desirably lead in the integrated formation, the force commander must consider the distance desired between the tanks and mechanized infantry before starting the assault. This distance is based upon consideration of four factors:

(1) *Mission.* If the mission requires rapid, closely controlled movement, and undue enemy interference is not anticipated, as in a road march or in the exploitation, mechanized infantry may follow more closely behind the tanks than would be the case if effective antitank fires were being directed at the tanks.

(2) *Type and capabilities of enemy antitank weapons.* If the enemy is equipped only with short range antitank weapons such as rifle grenades, rocket launchers, etc., the mechanized infantry may follow the tanks closer than would be the case if the defending forces were using large caliber, long range, high velocity, flat trajectory, antitank weapons.

(3) *Type of terrain.* If the terrain is rolling or rough, affording numerous defilade positions, mechanized infantry may follow the tanks closer than would be the case if the terrain were open and relatively level or flat.

(4) *Enemy action.* The distance between tanks and mechanized infantry in the integrated formation must not become so great as to permit the enemy to interpose an effective force between its elements, which might permit separate defeat of both tanks and mechanized infantry.

b. Tanks and mechanized infantry normally attack in a closely coordinated, mutually supporting formation. This is not to imply that tanks and mechanized infantry are intermingled in the same formation, for tanks will usually lead, followed at varying distances by the mechanized infantry.

c. The armored personnel carrier is not a tank and must not be

employed as such. It is designed to give battlefield mobility to infantry with a degree of armor protection against artillery fragments, small-arms fire, and effects of nuclear radiation. Loss of armored personnel carriers seriously reduces the mobility potential of mechanized infantry; the commander must not expose them unnecessarily to effective enemy antitank fire.

d. Mechanized infantry should not be dismounted before it is necessary. In the attack, mechanized infantry dismounts in the closest possible, tactically feasible, defilade position short of the objective or enemy position. The assault is normally conducted on foot. In some situations, because of the nature of the terrain or nature of enemy resistance, it may be unnecessary to dismount the mechanized infantry until the objective is overrun. The decision as to when and where to dismount mechanized infantry, if they are to be dismounted, is the decision of the local commander (team commander or platoon leader) based on the existing situation.

79. Methods of Attack for Tanks and Mechanized Infantry

a. There are three general methods of employing tanks and mechanized infantry together in the attack:

(1) Tanks and mechanized infantry attack on one axis.

(2) Tanks and mechanized infantry attack on two converging axes.

(3) Tanks support by fire only.

b. During an attack, any 1 or more of the 3 methods may be used. As the combat situation changes, it may become necessary to employ a method other than the one used initially. The attacking force must be capable of changing from one to another as the attack progresses.

c. Regardless of the method or combination of methods used, the following apply:

(1) Tanks must be employed so that miximum use is made of their battlefield mobility, armor-protected firepower, speed, and shock action.

(2) The rate of advance of the attack should be the maximum rate permitted by the terrain and enemy situation.

(3) The mechanized infantry should remain mounted as long as possible so that:

(*a*) The attacking force can move forward at the speed of the tanks and armored personnel carriers to close with and destroy the enemy.

(*b*) The battlefield mobility of both elements of the tank-mechanized infantry team will be retained.

(*c*) Casualties will be minimized in areas swept by small arms and artillery fire.

(*d*) Artillery airbursts can be employed in support of the attacking force.

(*e*) A degree of protection will be afforded against the effects of nuclear weapons.

(*f*) The energy of the infantryman will be conserved so that they will be better able to fight when needed.

(4) Mechanized infantry normally dismount when it is necessary for them to:

(*a*) Prevent their destruction by enemy antitank fire.

(*b*) Breach or remove obstacles that prevent forward movement of the tanks.

(*c*) Assist in the neutralization or destruction of antitank weapons that are holding up the forward movement of the tanks and armored personnel carriers.

(*d*) Take part in an assault through heavily wooded areas or very rough or broken terrain.

(*e*) Lead an assault across defended rivers that cannot be crossed by armored personnel carriers.

(*f*) Take part in an assault through fortified areas or through defended towns and villages that cannot be bypassed.

(*g*) Assist the tanks forward under certain conditions of low visibility and restricted fields of fire (darkness, smoke, heavy woods, broken terrain, etc.).

(*h*) Mop up a defended objective and assist in the consolidation.

80. Tanks and Mechanized Inafntry Attack on One Axis

a. General. In the attack on one axis the entire attacking force uses the same approach to the objective. The infantry may be either mounted or dismounted using varied formations in their advance.

b. Advantages. This method promotes coordination and control, since the entire attacking force is moving in one direction on the same axis. Compared with other methods, it permits close mutual support among elements of the attacking force.

c. Favoring Conditions. Conditions favoring this method include:

(1) Attack over open terrain devoid of vegetation capable of concealing armored vehicle movement.

(2) Only one likely avenue of approach is available.

(3) The objective cannot easily be flanked.

(4) Control of the armored unit is simplified in comparison with the other methods of attack.

d. Tanks with Mechanized Infantry.

(1) *Tanks and mechanized infantry employed in mass.*

(*a*) The attack of tanks and mounted mechanized infantry units can be coordinated by combining the combat formation into one mutually supporting, integrated formation (fig. 43). The distance between elements in the formation is based on the tactical situation. Tanks lead so they can use their firepower. The armored personnel carriers are located to the rear of the tanks so as not to be unduly exposed. This technique is used against enemy positions not strong in antitank weapons.

(*b*) The arrival of the tanks and mechanized infantry at the objective should be so timed as to provide close mutual support during the assault (par. 83).

(2) *Tanks with mechanized infantry, movement by bounds.*

(*a*) Mechanized infantry follow the tanks by bounds (fig. 44). This technique of movement increases the security of the mechanized infantry but reduces the speed of the advance. If the tanks advance as a unit from one terrain feature to the next, the armored personnel carriers must move rapidly into defilade behind successive terrain features.

(*b*) Control must be exerted to make certain that tanks precede infantry onto the objective in one coordinated assault. This normally requires a rapid final movement by the mounted mechanized infantry to close the distance to the tanks.

e. Tanks with Dismounted Infantry.

(1) When terrain, obstacles, or enemy antitank weapons restrict or stop the movement of tanks but permit dismounted infantry to move forward, tanks may temporarily support by fire while the infantry advance. When the infantry attack has progressed sufficiently or an obstacle has been removed, the tanks may move forward, pass through the infantry, and lead the assault. This type of action must not be confused with the method of

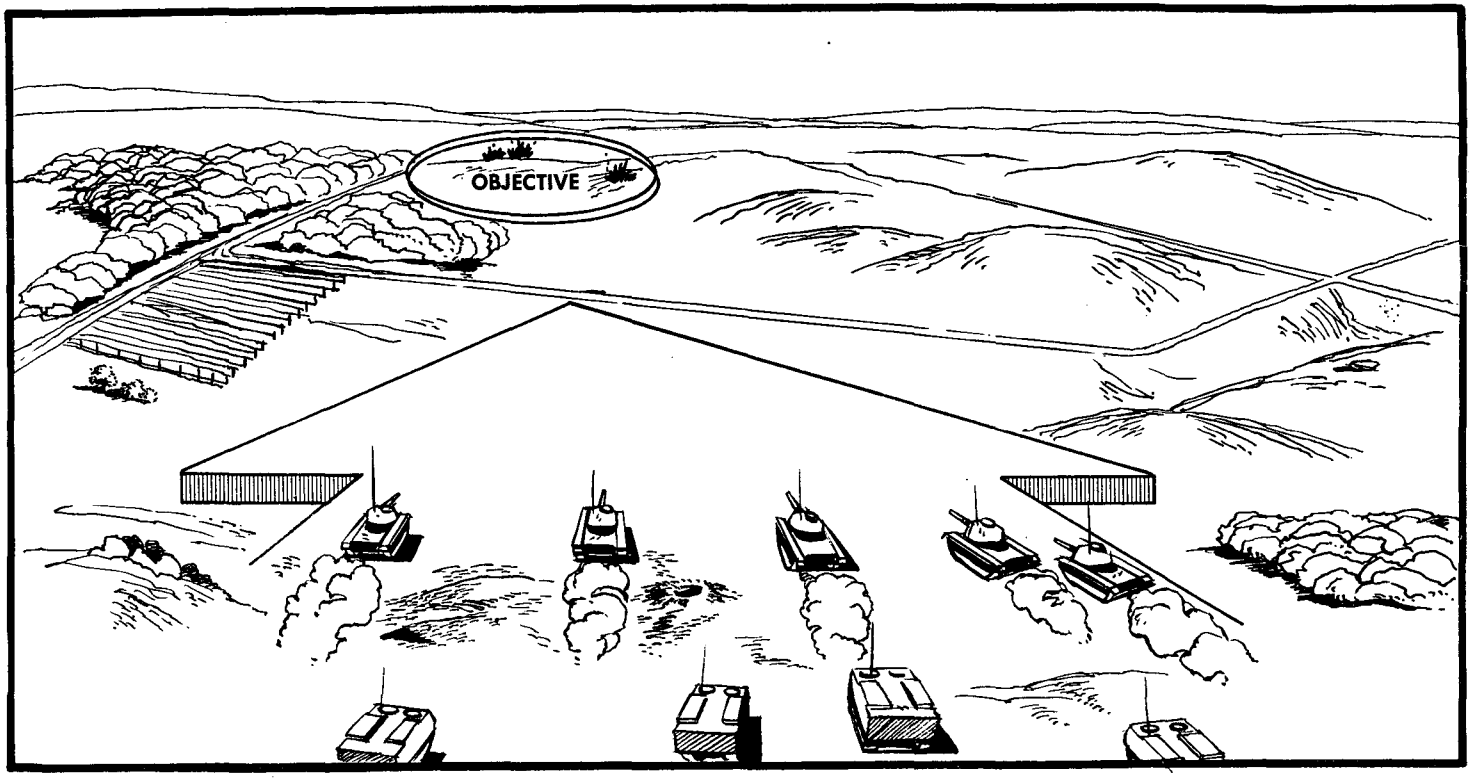

Figure 43. Tanks and mechanized infantry on one axis.

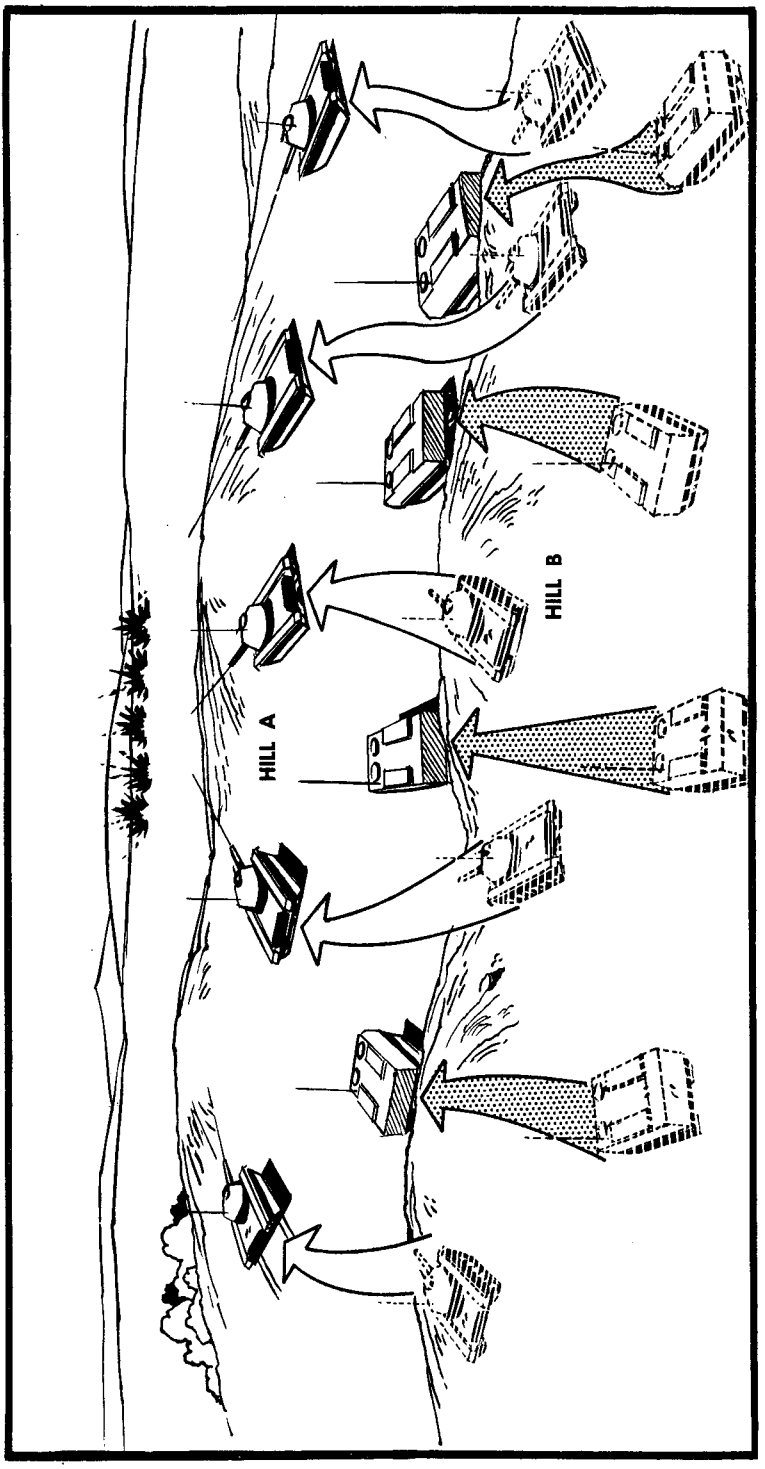

Figure 44. Tanks and mechanized infantry on one axis (movement by bounds).

tanks supporting by fire only, as the intent is for the tanks to participate in the assault of the objective.

(2) When artillery or mortar airbursts are used to support the attacking force, the infantry should remain at a safe distance from the airbursts.

(3) The armored personnel carriers should follow closely behind the infantry, to be readily available when needed to continue the attack mounted or to assist in the consolidation of the objective. They may move forward by bounds or follow the attacking force.

81. Tanks and Mechanized Infantry Attack on Two Converging Axes

a. General. The attacking force uses two different axes for the approach to an objective. Two techniques may be used: tanks with mechanized infantry on both axes, and tanks on one axis with dismounted infantry on a separate axis. Coordination of the assault is more difficult than in other methods.

b. Advantages. This method normally achieves the maximum surprise effect, particularly when the elements on both axes are mounted. It provides a greater opportunity for the attacking force to strike the enemy flanks or rear, and it has the advantage of forcing the enemy to fight in two directions. When tanks are employed on both axes, hostile tanks are more often forced to expose their vulnerable sides and rear to fire from one of the friendly tank elements.

c. Favoring Conditions. Conditions favoring this method include:

(1) More than one avenue of approach is available.

(2) At least one avenue of approach provides concealment.

(3) The objective can be flanked.

(4) Control of the unit is not a major problem thus closer coordination can be attempted.

d. Tanks with Infantry on Both Axes.

(1) A force of both tanks and infantry attacks along each axis. On each axis the infantry may be either mounted or dismounted as the situation dictates (fig. 45).

(2) The movement on each axis of tanks and infantry is governed by the same considerations as when a single axis is used.

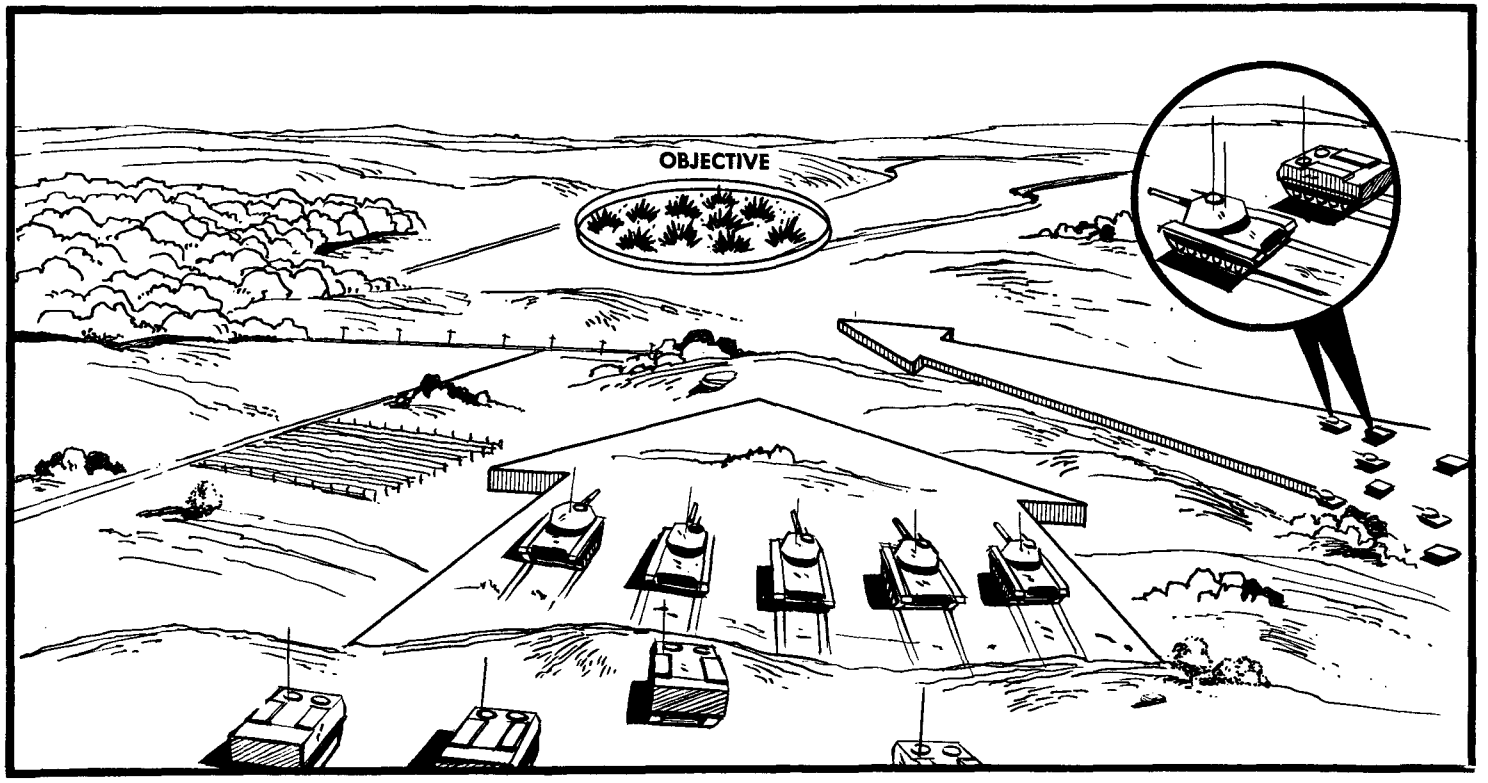

Figure 45. Tanks and mounted mechanized infantry on two converging axes.

e. Tanks on One Axis with Dismounted Infantry on a Separate Axis.

(1) Normally a force of both tanks and mechanized infantry attacks along each axis. Situations may arise in which it is necessary to employ infantry dismounted on one axis and tanks on another axis (fig. 46).

(2) When the attacking force is held up by enemy antitank fire or obstacles, dismounted infantry may move along a covered route impassable to tanks in order to strike the enemy flank. The tanks initially support by fire, then move on their axis to the objective. The elements on each axis should arrive on the objective at approximately the same time, or the attack may be so timed that the tanks arrive first, under artillery or mortar airbursts, with the infantry following.

(3) This technique is employed when one avenue of approach is suitable for tanks but unduly exposes the dismounted infantry while the other can be used by dismounted infantry but restricts or prevents the movement of tanks.

82. Tanks Support by Fire Only

a. The infantry attack to seize the objective, and the tanks support the attack by fire only (fig. 47). Conditions that make it necessary to use this method are:

(1) Obstacles prevent the tanks from moving in the attack, and an objective must be seized to protect the reduction of the obstacles. For example, it might be necessary for infantry to seize a terrain feature from which the enemy is covering a minefield or roadblock that is holding up the advance of the tanks.

(2) Ground impassable to tanks must be seized.

b. When unfordable streams must be crossed, tanks support mounted mechanized infantry by fire only. Armored personnel carriers can cross streams unfordable for tanks; therefore, the tanks should take up defiladed firing positions from which they can support by fire the crossing by the armored personnel carriers.

c. This is the least desirable of the three methods and should be employed only when necessary. Even though the shock action of the tank is lost, its fire support can assist the infantry greatly. As soon as the obstacles are breached or a suitable avenue of approach is uncovered the tanks must move rapidly to join the infantry on the objective.

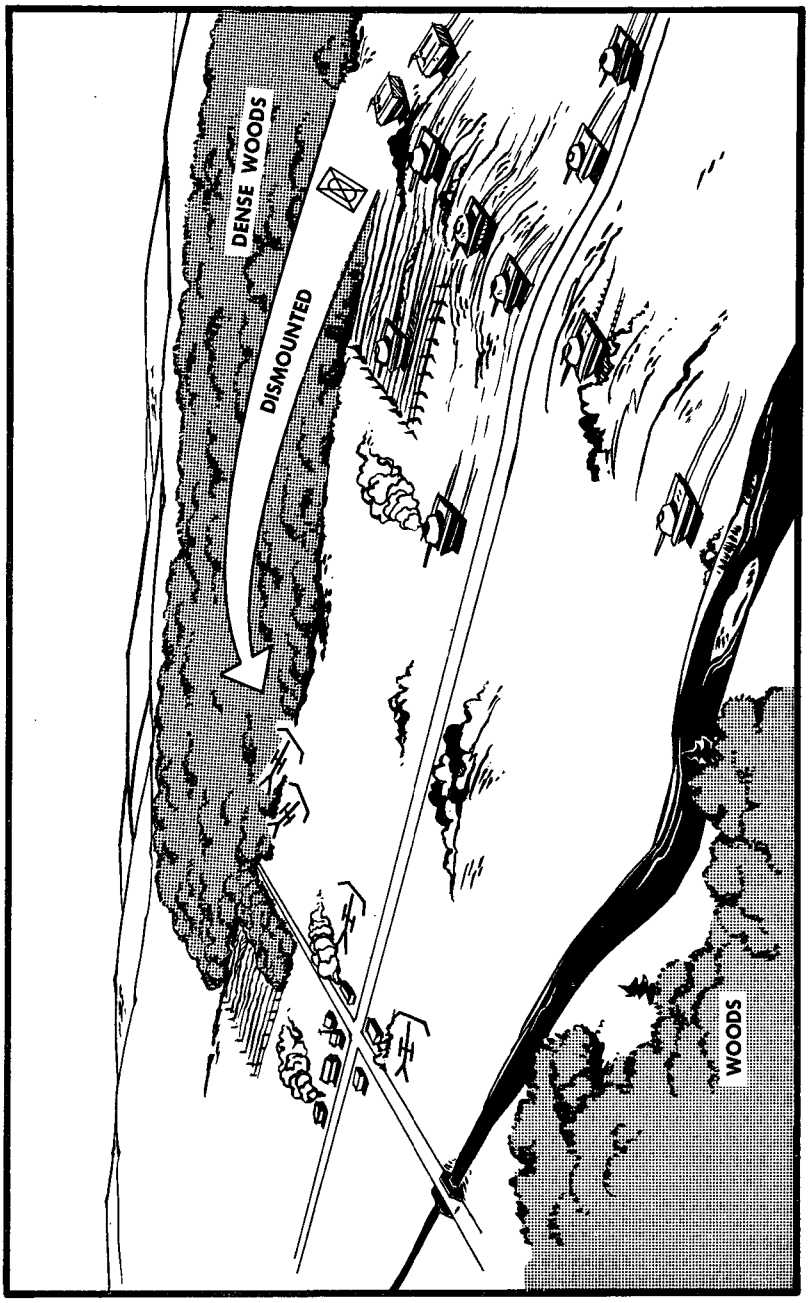

Figure 46. Tanks and mechanized infantry attacking on two converging axes.

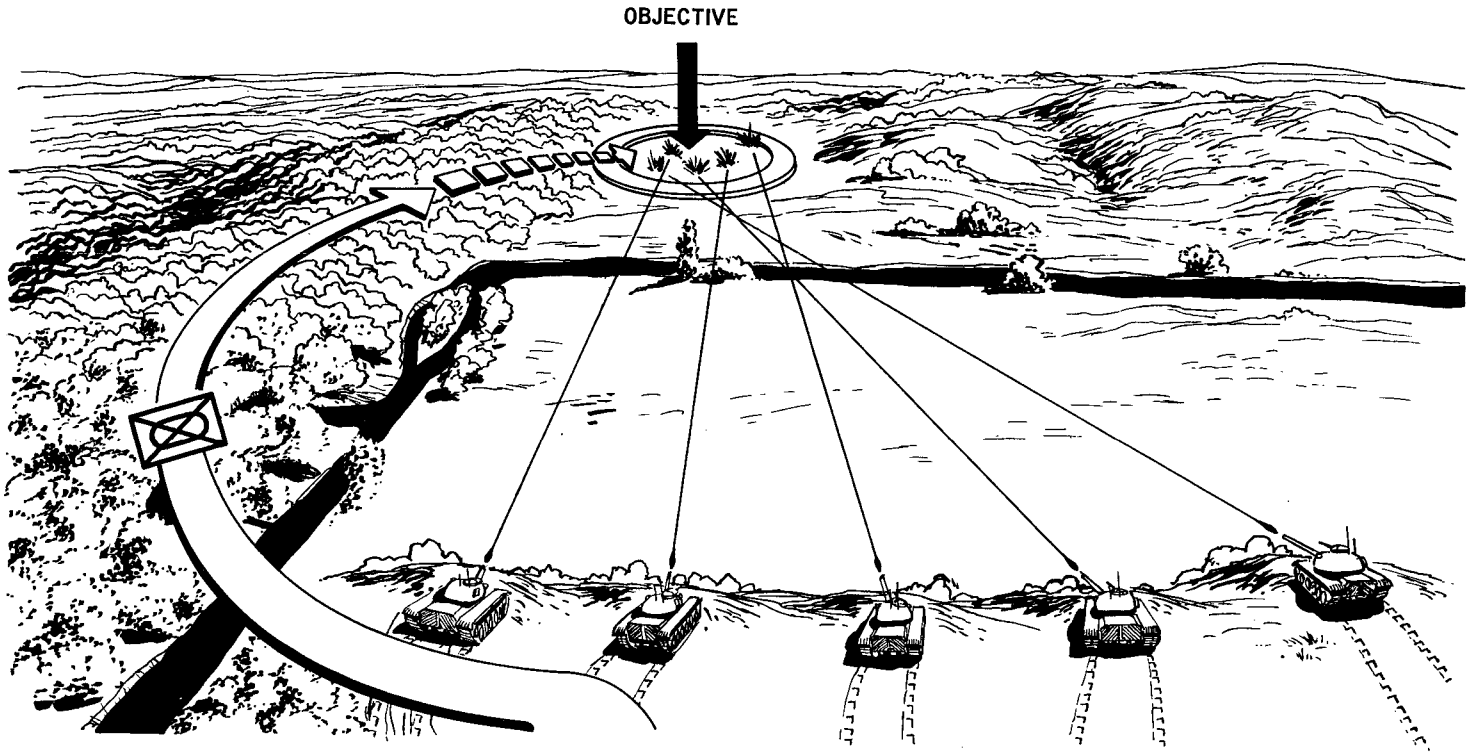

Figure 47. Tanks support by fire only.

83. Conduct of the Assault

a. General. The desired goal in the assault is to bring the maximum firepower and shock action of tanks, infantry, and artillery to bear upon the enemy simultaneously to destroy him as rapidly as possible with the fewest casualties, either troop or vehicular, to friendly forces. The commander must achieve this complex goal by forceful and decisive action coupled with judgment in employing the combined arms team. The assault of a defended position by tanks and mechanized infantry in cooperation with artillery may take three forms:

(1) *Tanks and dismounted mechanized infantry assault in coordination.* Regardless of the method of attack used to bring the force into the assault position, the assault is conducted as a coordinated effort. As the force approaches the objective, the objective is under heavy supporting fires. The tanks maintain their rate of advance, and increase the volume of fire by saturating the objective with machinegun fire and by use of the main gun. At this time the mechanized infantry increases its speed in moving to dismount positions to overcome the loss of time in dismounting and to maintain the proper tank-infantry coordination in the assault. As the force reaches the near edge of the objective, supporting fires are lifted or shifted to the flanks or rear of the objective to prevent escape of the enemy or to break up counterattack formations. The fires of infantry and tank weapons replace the indirect supporting fires. The mechanized infantry, behind the tanks, stop in the closest, tactically feasible, hull defilade position short of the objective and the infantry dismount. As the tanks assault the objective, the infantry, now dismounted, follow the tanks at such a distance as will provide protection to the tanks by engaging infantry type targets such as individual antitank weapons and tank killer teams. Whenever possible, the machineguns of the armored personnel carriers are used to support the assault until their fires are masked by advancing riflemen. The successful movement of the attacking riflemen is largely dependent upon the effectiveness of the supporting fires. Normally, enemy resistance will dictate an advance by fire and movement. In this case the enemy position(s) offering resistance must be singled out by rifle platoon and squad leaders has individual objectives. When the fires of the attacking

echelons have eliminated or neutralized effective enemy fire, assault fire techniques are employed. The shock effect of assaulting tanks and infantry is multiplied by rapid movement and heavy volumes of fire, including the use of hand grenades. During this time the tanks continue to saturate the objective with machinegun fire, destroying enemy positions and weapons with the main tank gun. As the tanks arrive at the far edge of the objective, fire is directed on the enemy dispositions beyond the objective area. Effective placement of this fire reduces materially the enemy's capability of organizing and launching a counterattack. As soon as the objective is seized, the tanks and mechanized infantry are moved to positions dominating avenues of enemy approach and prepare to repel counterattacks or to continue the attack. Further actions to consolidate the positions are carried out.

(2) *Tanks and mechanized infantry in the mounted assault.* In some situations, because of the nature of the terrain or nature of enemy resistance, it may be unnecessary to dismount the mechanized infantry until the objective is overrun. The mounted assault differs from the dismounted assault in the employment of supporting fires and the relative time that mechanized infantry is dismounted, if necessary. In the mounted assault, the integrated force may assault the objective under cover of overhead artillery and mortar fire. Under cover of this fire, tanks and mechanized infantry move onto the objective. Supporting fires are then shifted to isolate the objective and mechanized infantry is dismounted to mop up.

(3) *Tanks support by fire only.* Terrain or obstacles may make it impossible for tracked vehicles to join in the assault. In this situation mechanized infantry (dismounted) will conduct the assault just as any other infantry unit. Tanks will be used to support by fire with full consideration given to the long range and rapid rate of fire of the tank weapons and the precision and control with which these fires can be delivered. As soon as the obstacle can be overcome, tanks will rejoin the infantry and again lead in the attack.

b. Coordination and Cooperation in the Assault. The tank-mechanized infantry grouping is a team employed by the commander in a manner that takes maximum advantage of the best

characteristics of both elements. Maximum destructive effect on the enemy is obtained only when careful coordination and complete cooperation is effected among the individuals of the tank and mechanized infantry platoons and their leaders, and between platoons and company teams. *Lack of such coordination may lead to one or more of the following undesirable situations:*

(1) *Undue separation between tanks and mechanized infantry in the assault.* This condition may permit the enemy to man his weapons, destroy supporting dismounted infantry, and attack unsupported tanks at extremely close ranges.

(2) *Armored personnel carriers mingle with or precede tanks in the assault.* Such action exposes the armored personnel carrier to fires it was not designed to withstand. An enemy gunner may or may not distinguish between two types of tracked vehicles at this time. Further, infantry mounted in carriers has little power to counterattack.

(3) *Cruising the objective.* Unless tank commanders and armored personnel carrier commanders or drivers are given specific directions as to their mission upon completing the assault, vehicles may needlessly be exposed to enemy fire as a result of confusion and resulting unnecessary, uncovered movement on the position.

(4) *Armored personnel carriers left in exposed positions.* The vehicle commander must insure that the driver places the vehicle in a protected or defilade position immediately after the squad dismounts to preclude its needless loss from antitank or other fires.

(5) *Remaining mounted too long.* Vehicle commanders, platoon leaders, and company commanders must realize that remaining mounted too long may expose the vehicle and its squad to needless destruction by short range weapons manned by determined enemy soldiers.

c. Rejoining of Armored Personnel Carriers and Squads on the Position. Once the assault has cleared the position, it will be necessary to bring armored personnel carriers forward to rejoin their units. Any of several techniques may be employed, but the method used must be coordinated with vehicle drivers before the mechanized infantry dismounts.

(1) *Radio.* All armored personnel carriers are provided with vehicular radios that net with the sets carried for dismounted use. If this technique is employed, the range

of the transmitting station must be considered and the driver must constantly monitor the radio.

(2) *Messenger.* A dismounted messenger may be sent to the position occupied by the armored personnel carriers to guide them to their respective units. This method depends on a route clear of the enemy for its success and is the slowest method.

(3) *Pyrotechnic devices.* A pyrotechnic signal may be fired to indicate to vehicle drivers the time to move and the approximate location of the unit. This technique is dependent for success on constant scanning of an area by the driver, visibility in the area, availability of pyrotechnics to which this meaning may be assigned, and possession within the unit of the signal device.

(4) *Vehicles follow dismounted personnel.* Under conditions of limited visibility and when effective enemy antitank fires are unlikely, armored personnel carriers may follow dismounted mechanized infantry keeping the last man in sight. This technique has the advantage of keeping the armored personnel carrier close to its unit with little time lost in remounting, but may result in its loss if the unit becomes involved in a fire fight.

CHAPTER 5
RECONNAISSANCE AND SECURITY

Section I. RECONNAISSANCE

84. Reconnaissance, General

a. Reconnaissance is a directed effort in the field to collect information of the enemy and the area of operations. This information is classified under the headings of the enemy, the terrain, the weather, and the enemy's resources. The three types of reconnaissance are: close, extended, and deep.

b. The purpose of reconnaissance is to obtain combat information of the enemy and the area of operations for the production of combat intelligence, which is used by the commander in forming his plan of operation.

c. Reconnaissance and security complement one another and cannot be readily separated. Effective ground reconnaissance provides a certain amount of security. The activity of a security force provides a certain amount of reconnaissance.

d. All units conduct reconnaissance to some degree. Reconnaissance is continuous on the battlefield, and all information of the enemy and terrain is reported as it is obtained, including negative information.

e. For detailed discussion of reconnaissance classifications, agencies, fundamentals, type missions, control and coordination, see FM's 5–36, 17–1, and 17–36.

85. Battle Reconnaissance

Battle reconnaissance is made by all elements of the command. All commanders are alert to report information concerning:

a. Location of antitank weapons, mines, and obstacles.

b. Changes in location of friendly troops.

c. Progress of the operation.

d. Avenues of approach.

e. Changes in enemy dispositions.

f. Arrival of enemy reinforcements.

g. Enemy air and tank attacks.

h. Probable direction of enemy counterattacks.

i. Nuclear and CBR attack.

Section II. SECURITY

86. Security, General

a. Security includes all measures taken by a command to protect itself from surprise, annoyance, espionage, sabotage, or observation by the enemy. Its purpose is to preserve secrecy and to gain and maintain freedom of action.

b. Security is achieved by effectively providing for the detection of a threat, for sufficient time to react to the threat, and for the avoidance, neutralization, or destruction of the threat. Security is enhanced by effective intelligence, counterintelligence, and counterreconnaissance operations. All units are responsible for their own security, regardless of the security provided by other units. A security force for a larger formation must be strong enough, and must be properly located, to provide adquate time for the main body to react. However, security measures must not unnecessarily divert forces or effort from the accomplishment of the mission of the main body.

87. Security Forces, Armor

Security for the tank battalion is provided by specifically designated security forces; air and ground reconnaissance to the front, flanks, and rear; liaison with adjacent units; and the composition of the force. Administrative support elements may be protected by being placed in proximity to tactical elements. Depending on the situation, security may be provided by one or all of the following types of security forces. (See FM 17–1.)

a. Covering force.

b. Advance guard.

c. Flank guard or guards.

d. Rear guard.

e. Rear area security force.

f. Screening force.

88. Covering Force, General

a. The mission of a covering force is to provide an early development of the situation, defeat enemy forces within its

capabilities, and delay, deceive, and disorganize the enemy. A covering force operates beyond advance, flank, or rear guards and may be employed when the main body is engaged in offense, defense, or a retrograde movement.

b. A covering force engages in any type action necessary to accomplish its mission, but usually conducts an offensive action or a delaying action. The force must not become so engaged as to allow itself to be overrun or bypassed.

c. When operating as covering force in an offensive operation, a tank battalion task force normally advances with companies abreast to insure complete coverage and to eliminate the possibility of bypassing enemy elements. At the same time, sufficient strength should be retained in reserve to influence local actions. The reserve is so located that it can be employed readily to assist in the accomplishment of the mission.

d. A tank battalion task force employed as covering force during the defense is positioned beyond the observation posts of the fixing force in the mobile defense. The distance within which the covering force operates in front of the fixing force is divided into company team zones, and the companies are deployed to cover the battalion zone. An outpost system is organized, consisting of observation posts and mobile patrols. These positions are located on commanding terrain features that dominate likely avenues of enemy approach. Engineer, self-propelled artillery, and mechanized infantry elements should be attached to the battalion for the covering force mission. When forced to withdraw, the battalion fights a delaying action back through the security elements of fixing or forward forces, avoiding decisive engagement with the enemy. Every effort must be made to deceive the enemy as to the true location of the main defensive position. The action of the covering force during the defense is generally the same as for a delaying action.

e. When assigned a covering force mission to cover a withdrawal, a tank battalion task force uses the techniques described (*d* above).

f. All elements of the covering force, including engineers and artillery, should be placed under one commander. The covering force commander operates under the direct control of the main body commander. The main body commander specifies the area of operation or the units to be covered.

89. Advance Guard, General

a. An advance guard is a security detachment that operates ahead of the main body and, behind the covering force if used,

to provide early development of the situation; to insure the uninterrupted advance of the main body; to protect the main body against surprise; to cover the deployment of the main body if it is committed to action; and to facilitate the advance by limited removal of obstacles, clearing routes, or locating bypasses.

b. The advance guard moves as rapidly as the situation will allow. It performs continuous reconnaissance to the front and flanks and pushes back or destroys small enemy groups before they can hinder the advance of the main body. When the advance guard encounters large enemy forces or heavily defended areas, it acts immediately to develop the situation. It employs every means available to determine the location, strength, disposition, and composition of the enemy. It may then be required to join in the attack by the main body. The advance guard must be far enough in front of the main body to insure that the commander has freedom of action in the employment of the main body. However, it must not be so far in front that it can be destroyed by enemy attack before assistance can reach it. Distances are reduced at night, in close terrain, under conditions of low visibility, and during adverse weather.

c. The advance guard normally advances in column until contact is made. It may move continuously or by bounds. Movement by bounds is employed when contact with the enemy is imminent and the terrain favors this technique.

d. When contact is made, the following occurs:

(1) *Deploy.*

(*a*) Units should move immediately to positions from which they can be employed against the enemy.

(*b*) The immediate action of the commander is to report the enemy contact to his higher headquarters.

(2) *Develop the situation.* This consists of the action necessary to determine the strength, location, composition, and disposition of the enemy encountered.

(3) *Choose a course of action.* After developing the situation, the commander must choose a course of action that is appropriate in the immediate situation and will insure the accomplishment of the assigned mission.

(4) *Report.* The commander then reports to his higher headquarters. This report includes:

(*a*) The complete enemy situation as it has been developed.

(*b*) The course of action the commander will follow.

90. Tank Company and Platoon—Advance Guard

a. A tank company or company team may form the advance guard for a battalion task force or a brigade. A tank platoon may form the advance guard for a company team or a battalion task force. However, in the normal situation where the company team is operating as part of the battalion task force, the leading company team need not employ a platoon as advance guard, as the main body commander will have designated an advance guard for the entire main body.

b. For a suggested formation of a tank company team employed as the advance guard for a larger force, see figure 48. In each situation, the factors of METT will dictate the exact formation to be adopted. Tanks usually lead, in order to place maximum firepower forward. Mechanized infantry elements are kept far enough forward in the column to support the leading tank platoon: when required, engineer elements may be attached to or placed in support of the advance guard. At night or when hostile contact is imminent, the advance guard sets the rate of march; at other times, the advance guard conforms to the rate of the main body. The platoon leader of the lead platoon places himself where he can best cope with any arising situation. Normally the lead tank of the leading platoon is rotated by tanks within the platoon, and the leading platoon by platoons within the company.

c. The leading platoon of the advance guard is responsible for its own all-round security, and there are certain measures that it must take to provide this security:

(1) All-round observation. In figure 49 it will be noted that the leading tank does not have a primary sector of observation. The reason for this is that its commander is busy selecting the detailed route; however, he still observes to the front and flanks. The second tank is given the primary mission of observing to the front, the next tank to the right flank, the next tank to the left flank, and the last tank to the rear.

(2) Maintaining designated intervals and distance. This avoids bunching and helps to prevent exposing all tanks of the platoon to enemy fire at the same time.

(3) All crews remain alert and ready for immediate action.

(4) Employing reconnaissance by fire before moving out of a covered or concealed position and during movement.

(5) Rapid movement forward.

(6) Designating air sentinels to watch for enemy aircraft.

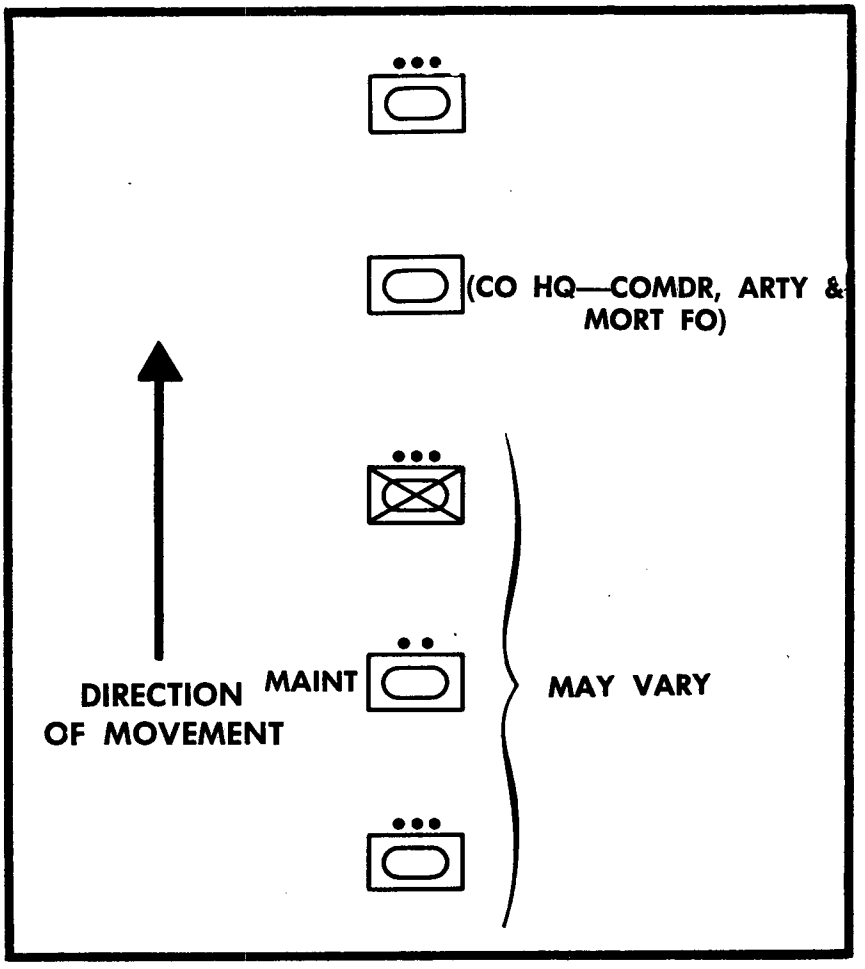

Figure 48. Typical order of march, tank company team as the advance guard for a battalion task force.

d. When his unit is designated as the advance guard, the tank company commander or platoon leader should ascertain from the higher commander the following:

(1) The route or axis of advance of the main body.
(2) The frontage to be covered by the advance guard.
(3) The fire support available from the main body.
(4) Possible assistance from tactical aircraft, and from Army air vehicles along the route.
(5) The mission of the company or platoon upon completion of its advance guard mission.

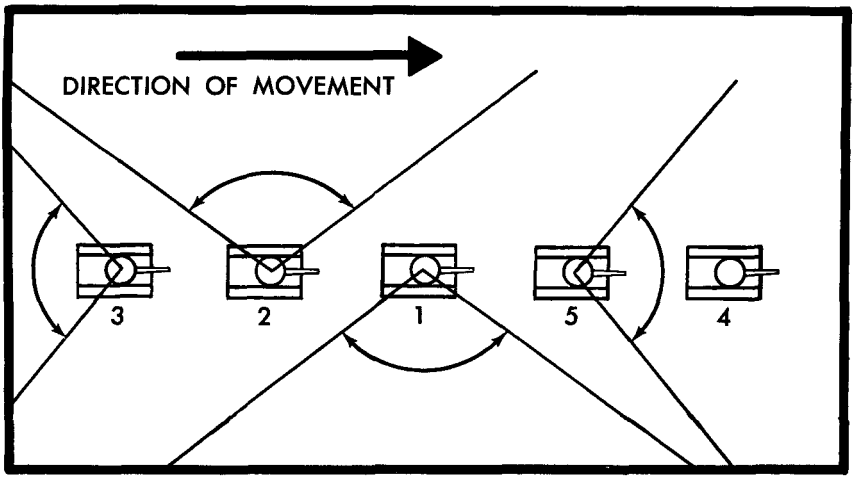

Figure 49. All-round observation.

(6) The tactical situation, including both friendly and enemy information.

e. When advancing on the road, the advance guard normally attacks directly from march column to destroy enemy forces that attempt to impede its advance. A standing operating procedure, consisting of several simple battle formations, such as used in battle drill, is useful in dealing with light opposition (fig. 50). This SOP should cover the employment of artillery, mortar, and Davy Crockett support from the main body as required. See chapter 7 for details of attacking from march column.

f. The advance guard commander deploys his force rapidly directing supporting fires against the hostile force, while attacking with his platoon in mass. He does not permit parts of his force to remain inactive on the road or in the open. Covered routes of approach to the objective are used to the maximum extent possible.

g. If the advance guard is unable to overcome the enemy force the main body commander may employ the technique used against heavy resistance. In this situation the leading tank platoon being unable to overcome the resistance, continues to develop the situation employing all available fires, and reports the disposition and strength of the enemy to the company commander. The company commander may order the lead platoon to continue fires against the enemy while the remainder of the team maneuvers to attack the enemy in mass from a new direction.

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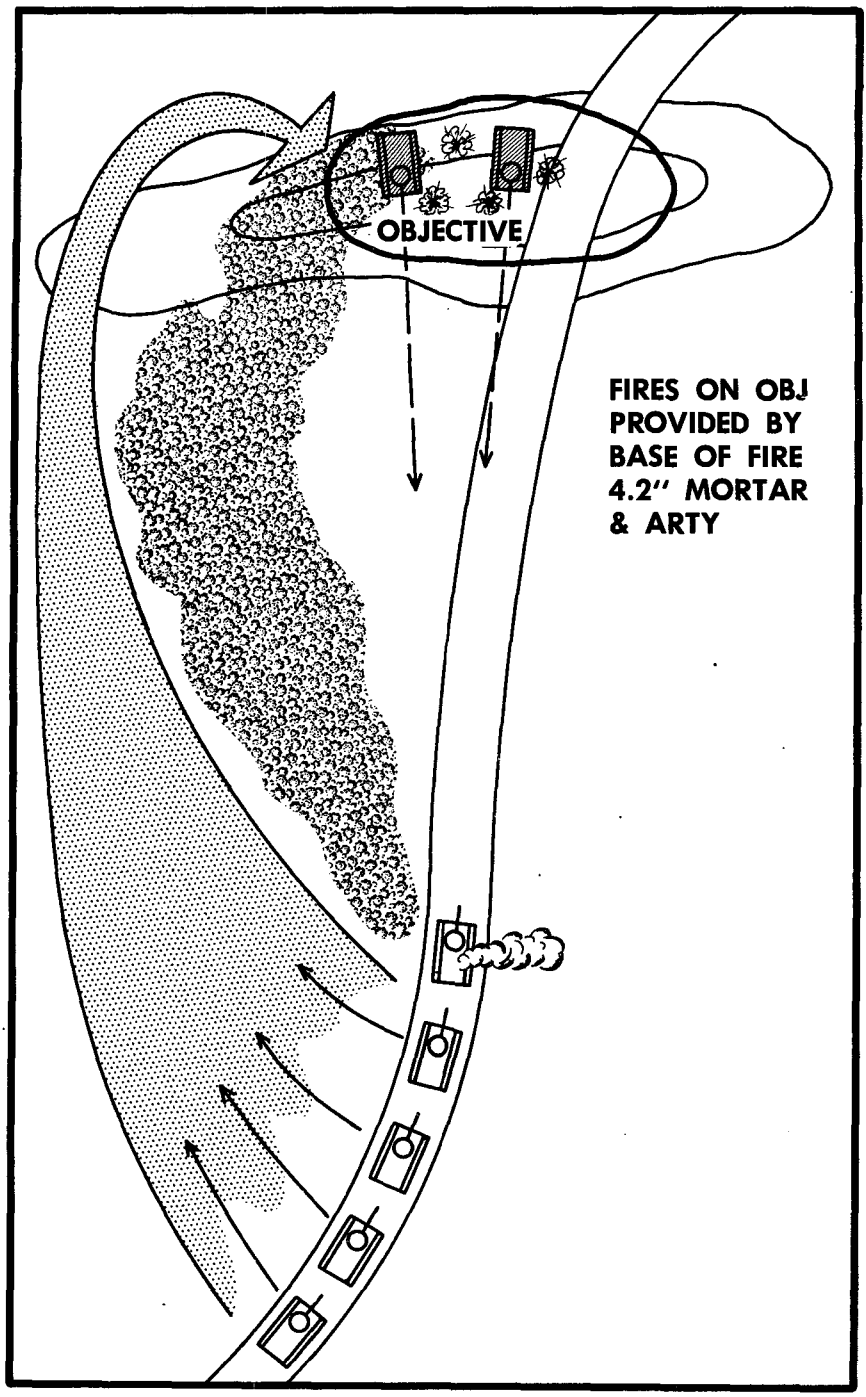

Figure 50. Tank platoon, advance guard action.

h. A night advance is conducted generally the same as a daylight advance. Security detachments of the advance guard are strengthened; the mechanized infantry is moved farther forward in the column, and distances between elements are shortened. The rate of advance is slower, and supporting fires are less effective; however, the possibility of gaining surprise is greatly increased. Particular care must be taken to establish the required security while effecting passage of defiles.

91. Flank Guard—General

a. A flank guard is a security detachment that protects the flanks of the main body. A flank guard may be employed during offensive, defensive, or retrograde operations to protect the main body from ground observation, direct fire of hostile weapons, and surprise attack. It employs offensive, defensive, or delaying action as necessary to accomplish the mission. The flank guard is mobile when the main body is conducting an offensive operation or a retrograde movement, and is stationary when the main body is in the defense.

b. The flank guard regulates its rate of movement on that of the main body. It must be far enough from the main body to insure that the main body commander has adequate time and space in which to maneuver to counter an enemy threat. This distance is not fixed, but depends on the factors of METT. All other factors being relatively equal, the stronger the flank guard, the greater the distance at which it may operate from the main body.

c. If the flank guard becomes over extended, it will not be able to furnish the desired protection to the main body. If the area to be secured becomes so wide that it cannot be secured adequately, the flank guard commander should ask for permission to cover part of the area by screening, or to be relieved of responsibility for the rear part of the area. This request would be in the form of a recommendation to the main body commander.

d. For detailed discussion of a flank guard's methods of movement for such forces as an advancing force, a penetrating force, a defensive force, etc., see FM 17–1.

92. Tank Company and Platoon—Flank Guard

a. The tank company seldom is employed as the flank guard for a unit smaller than a brigade. The tank platoon may be detailed as the flank guard for a battalion. Frequently, the tank platoon operates with the battalion armored cavalry platoon when performing this mission. When it so operates, the tanks engage

enemy threats discovered by elements scouting and observing. Tanks also may be used to cover roadblocks in conjunction with dismounted elements of the flank guard.

b. When the road net permits, the flank guard moves parallel to the main body. It sends out elements to observation posts and to commanding terrain along the route of advance (fig. 51). When no parallel routes exist and cross-country movement is difficult, the flank guard secures the flank by operating from the main body. Elements are sent out to occupy or control key terrain features (blocking positions) along the route of march. These elements use the alternating bounds (leapfrogging) or marching method of movement.

c. Army air vehicles are used as aerial observation posts. This enables a tank unit acting as a flank guard to cover more area and reduces the requirement for ground observation posts.

93. Rear Guard—General

a. A rear guard is a security force that protects the rear of a column from hostile forces during an advance or a withdrawal.

b. During the advance, the rear guard defeats or delays hostile forces attacking the rear of the main body, protects the trains, and collects stragglers. It follows the main body at a distance prescribed by the main body commander and usually moves on the axis of advance of the main body.

c. During a withdrawal, the rear guard covers the disengagement of the main body. It employs delaying action tactics and withdraws by bounds, basing its rate of movement on that of the main body or moving in accordance with prearranged plans. The rear guard must not allow itself to be bypassed or driven in on the main body.

94. Tank Company and Platoon—Rear Guard

a. During an advance, a tank platoon is capable of acting as the rear guard for a tank battalion task force. In a withdrawal, at least a tank company team will be required to perform this mission.

b. In a withdrawal, the rear guard engages the enemy to cover the disengagement of the main body. Usually it delays by successive bounds, basing its rate of delay on that of the main body. It must not allow itself to be driven in on the main body. The rear guard normally employs a delaying action. The vehicular guns of the rearmost vehicles are trained to the rear. While his main concern usually is to the rear, the commander of the rear

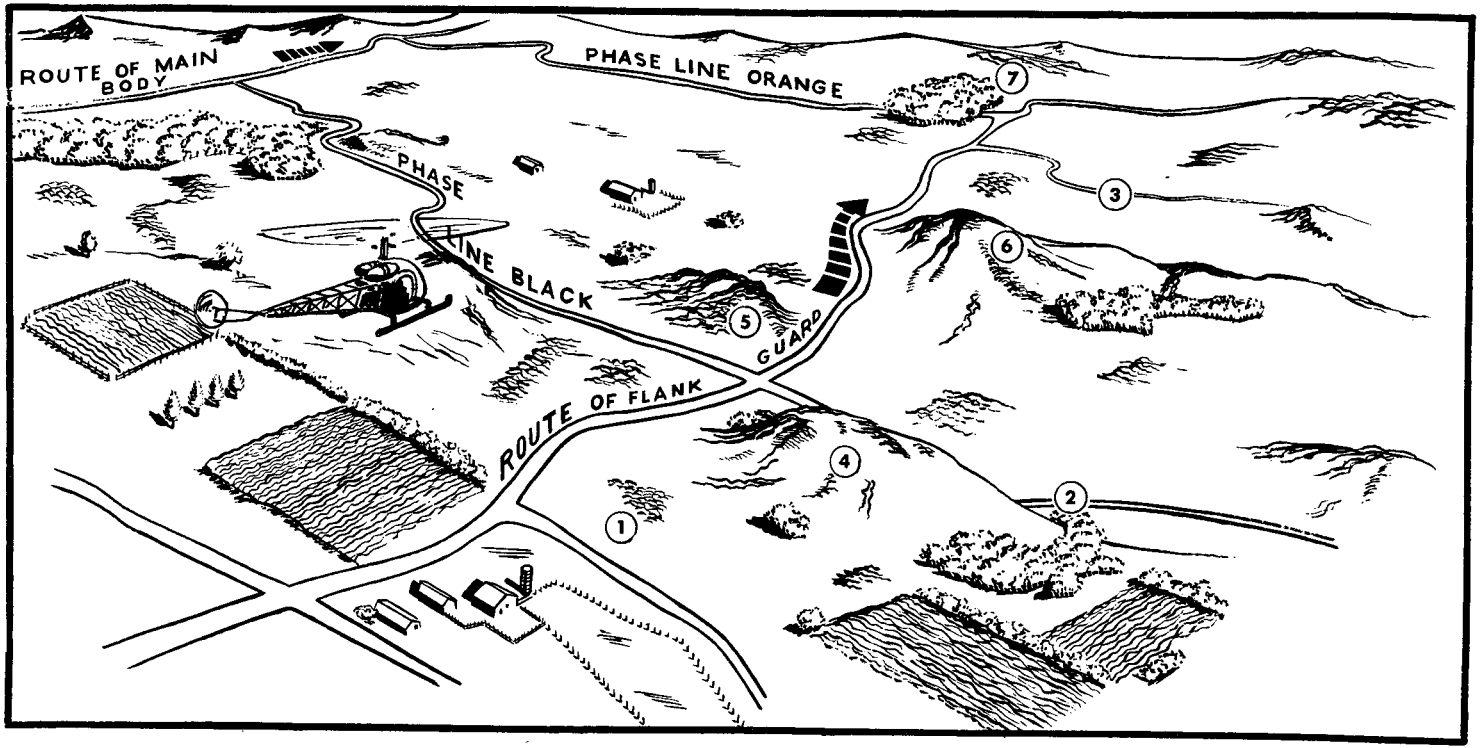

Figure 51. When the road net permits, the flank guard moves parallel to the main body, prepared to block roads (1, 2, and 3), observing from hills (4, 5, and 6), and reconnoitering woods (7).

guard is also responsible for his security to the front and flanks. When counterattacking, the rear guard commander must remember that he cannot expect help from the main body, except for fire support. The rear guard does not withdraw, except in accordance with prearranged plans, until the main body commander authorizes it to do so. The rear guard destroys all material that cannot be evacuated. Engineer elements with the rear guard are employed to execute demolitions and to install minefields and other obstacles to delay the enemy advance.

95. Screening Force

a. A screening force is a detachment that shields an area or a body of troops from surprise by observing and reporting enemy activity. Screening is the securing of an extended area by surveillance in which the security force observes, reports, and maintains visual contact with hostile forces. The missions of the screening force are to:

(1) Provide timely warning of enemy approach.

(2) Gain and maintain contact with, and report the movement of, enemy forces.

(3) Destroy or repel enemy patrols.

(4) Annoy and harass the advance of enemy forces.

b. Though armored cavalry and mechanized units are better suited for a screening mission, a tank battalion, suitably reinforced, is capable of performing such a mission. The principles and techniques in FM 17–36 will apply to the tank battalion when conducting a screening mission.

96. The Tank Company on an Outpost Mission

A tank company may be assigned the mission of providing security for a larger unit. The larger unit may be the security force in a mobile defense or other type of security element. The tank company and platoon establishes outposts in the accomplishment of the security mission.

a. The tank company commander assigns outpost sectors of responsibility to his platoons, although he may withhold a small reserve. Mechanized infantry elements attached to the tank company are employed with the tank platoons as the situation and terrain may require. A tank platoon outpost in open terrain normally requires less infantry protection than does an outpost in broken or heavily wooded terrain. Once the platoons have organized their respective sectors, the company commander coordinates their dispositions, making any necessary adjustments.

(1) The tank company commander and the forward observer plan for fire support. Artillery and mortar concentrations are prepared to cover possible avenues of enemy approach. Davy Crockett weapons are planned on likely target areas.

(2) A system of patrols maintains contact between the outposts.

b. At night, positions are taken up closer to the main body than those occupied during the day. The tank company commander must coordinate the movement of his platoons from the day to the night positions. The short range radars are integrated into the outpost system.

c. If attacked, the positions are defended with all available weapons, including supporting fires. Estimated strength, composition, and actions of the enemy are reported to higher headquarters.

97. The Tank Platoon on Outpost Mission

a. The tank platoon leader receives the general location of the outposts, and the limits of his sector, from his company commander. He makes as detailed a reconnaissance as time permits before moving his platoon to a temporary position in his general area of responsibility. Once there, he makes a rapid dismounted reconnaissance to locate exact outpost positions for each tank (fig. 52).

b. The outposts are placed on the best defensive ground available, to cover likely avenues of enemy approach. For daytime positions, fields of fire, observation, cover and concealment, and the presence of natural obstacles are all desirable, in the order given. At night, tanks should be drawn closer together. New positions should be occupied before dark using covered routes (fig. 53).

c. After selecting a primary position, each tank commander selects alternate and supplementary positions and reconnoiters satisfactory routes to them. Range cards are prepared for each position. A good range card must be complete, simple, and easily read. Two of the range cards meeting this basic requirement are the *circular* and *sketch* range cards. For details on preparation and use of range cards, see FM 17–12. Obstacles are supplemented and improved using all available material, including mines. Obstacles should be covered by tank and infantry weapon fires. Necessary sentries should be posted at each obstacle, to warn friendly troops of the location of mines employed in its defense.

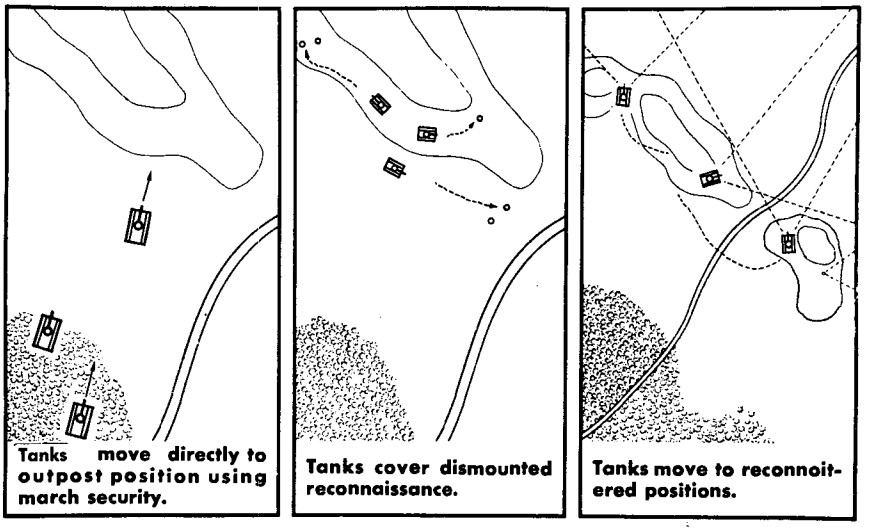

Figure 52. A method of assuming an outpost position.

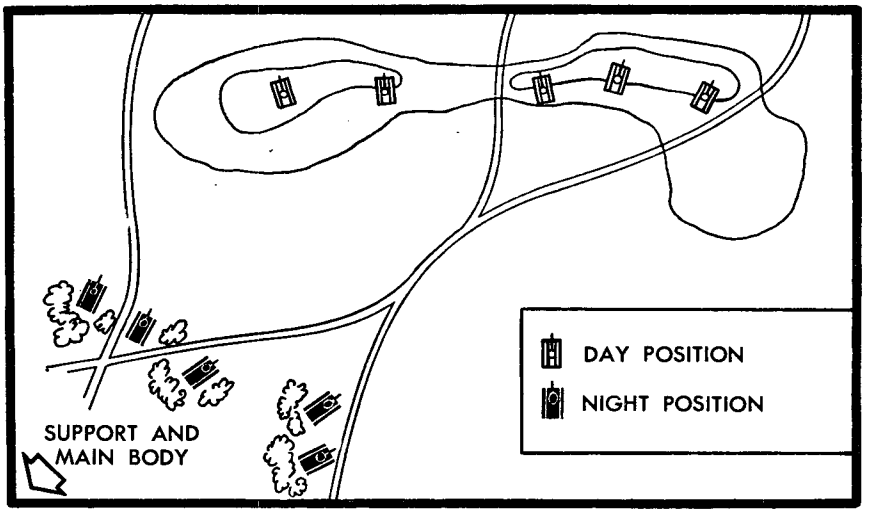

Figure 53. For daytime positions, fields of fire, observation, cover and concealment, and the presence of natural obstacles are all desirable. At night, tanks should be drawn in closer, occupying their new positions before dark if possible.

Precautions are taken to withdraw sentries into the outpost before enemy approach.

d. The platoon leader establishes observation posts (listening posts at night) to the front of each of his outposts. Outposts

should consist of tanks supported by mechanized infantry or infantry elements. The platoon leader also establishes contact with adjacent friendly units.

e. To insure hits on enemy troops or vehicles advancing along approaches when observation is poor, tanks should be sited to fire down avenues of enemy approach. Daytime positions can be some distance from the avenue of approach.

f. A part of the mechanized infantry or infantry unit may be teamed with the tanks to form one or more outposts on terrain that would be difficult or impassable for the tanks. If this is done, the platoon leader arranges to support the mechanized infantry or infantry element with tank fires.

g. As soon as his sector is organized, the platoon leader reports his exact dispositions to his company commander, submitting a sketch whenever possible. He plans artillery, mortar, and Davy Crockett concentrations to cover avenues of enemy approach.

h. If the enemy attacks, the observation post gives warning and, if ordered, withdraws into the outpost, maintaining contact with the enemy. The platoon leader reports the situation and calls for supporting fires. If the enemy force is small, the outpost may ambush it or counterattack. He holds his outpost position until relieved or authorized to withdraw.

98. Employment of Patrols

a. Patrols are small tactical units employed to gain information and to insure security (FM 21–75). A tank cannot be used where stealth is desired. However, in some fast-moving, fluid situations, tank units can be used to advantage in patrols; for example, when it is necessary to establish liaison with an adjacent unit and the area to be moved through contains enemy forces. Tank units participating in patrol actions should be reinforced and prepared to engage in tactical operations to accomplish their mission.

b. Tanks on patrol must not become roadbound. Crew members should be prepared to dismount and reconnoiter doubtful areas on foot.

CHAPTER 6
COMBAT SUPPORT

99. Artillery

a. Artillery support provides the armor commander with a powerful means of influencing the course of combat. Artillery performs two general tasks: it provides close and continuous fire support by attacking those targets most dangerous to the supported forces; it adds depth to combat by neutralizing enemy mortars, artillery, and close support nuclear delivery means, by restricting movement of hostile reserves, and by disrupting enemy command and communication installations. To make effective use of artillery support, the armor commander must be familiar with the capabilities and limitations of artillery and the means by which artillery fires are obtained when required.

b. See FM's 6–20–1, 6–20–2, and 17–1 for details of artillery support.

100. The Battalion Mortar and Davy Crockett Platoon

a. General. The employment of the battalion mortar and Davy Crockett platoon is based on its speed of operation and movement and constant readiness to provide nuclear and nonnuclear fire support. (Mortar firing normally is conducted from the on-carrier position.) The platoon leader places himself where he can best direct the effort of his platoon. He is often with the battalion commander or command group. He may control leading elements of the platoon during displacement, conduct reconnaissance, or visit the supported company teams for purposes of coordination.

b. Liaison. The platoon leader maintains liaison with the battalion commander and staff by personal contact or by radio, using the battalion command net. Liaison with the line companies or company teams is provided by the forward observers, who use the platoon command net for contact with the platoon position(s).

c. Forward Observer (FO) Teams. FO teams accompany line companies or company teams as specified by battalion order. The FO should normally accompany the company team commander. Commanders of supported company teams are responsible for providing armored vehicle transportation, as required, for platoon

FO's. These FO teams formulate and forward requests for fire, and adjust mortar and Davy Crockett fires. These fires may also be adjusted by artillery FO's. All officers and key NCO's of the battalion must be able to call for and adjust fires in case FO teams are not available. The procedures for requesting, coordinating, and adjusting fires are the same as for artillery fires.

d. Method of Employment. The battalion mortar and Davy Crockett platoon is best employed in general support of its parent battalion. When required by range limitations of the mortars or Davy Crockett weapons systems, inability of the battalion commander to control, or other exigencies of the situation, the mortar and Davy Crockett squads are employed in direct support of company teams or the armored cavalry platoon. The mortar squads may be attached to the companies or the platoon. (See appendix II for details of employing the battalion mortar and Davy Crockett platoon.)

101. Tactical Air Support

Tactical air force units may support tank units by attacking enemy ground forces with bombs, gunfire, napalm, and rockets, or by destroying enemy aircraft operating against friendly ground forces. (See FM 17–1 for details of tactical air support.)

102. Fire Support Coordination

The artillery liaison officer provided by the supporting artillery battalion functions as fire support coordinator for the tank battalion. At company level the company commander coordinates fire support for his company assisted by the artillery forward observer. (See FM 17–1 for details of fire support coordination.)

103. Short Range Ground Radar

The short range ground radar organic to tank companies provides ground-to-ground electronic surveillance and increases the parent unit's capability to perform combat surveillance. (See FM 17–1 for details of employment of the short range ground radar.)

104. Medium Range Ground Radar

The medium range ground radar organic to the ground surveillance section of the tank battalion provides medium range ground-to-ground battle area surveillance coverage to its parent unit. Normally, it is employed in general support of the battalion. (See FM 17–1 for details of employment.)

105. Division Engineer Support

The mission of engineers organic to divisions is to facilitate the movement of armor units, and to increase combat effectiveness by means of general engineer work. (See FM 17–1 for details of engineer support available to tank units.)

106. Armored Vehicle Launched Bridge (AVLB) Section

The mission of the battalion armored vehicle launched bridge section is to provide AVLB support for the battalion.

a. The section contains 2 armored vehicle bridge launchers and is normally employed in general support of the battalion. When required, the section may, in whole or by launcher be placed in direct support of, or attached to, a leading company team or the armored cavalry platoon.

b. When AVLB's from the division engineer battalion are in direct support of, or attached to, the battalion, the battalion commander will normally retain the divisional AVLB's as an assault bridge reserve, employing first his organic AVLB's.

c. The armored vehicle launched bridge is employed primarily in assault crossings of short gaps by combined arms teams, but because of its mobility, low unit weight, and minimum crew requirements, it may be used effectively in other ways. It is particularly suitable for spanning streams, antitank ditches, craters, canals, partially blown bridges, and similar obstacles that normally would slow the momentum of attack. The AVLB may be placed over existing bridges or parts of existing bridges to increase their load-carrying capacity.

d. Special employment of the AVLB:

(1) In instances where the flank of friendly forces is on a narrow stream or defile, the assault bridge may be used in making a flanking movement.

(2) In rear areas, requirements occasionally arise for short-span bridging. The assault bridge can be employed readily in these situations because of its mobility and speed of erection compared to conventional bridging.

(3) In retrograde movements, assault bridging can be used in place of conventional bridging that has been destroyed or removed. The assault bridge cannot be removed without exposing a crew member to small arms fire. If time permits, in retrograde movements, preparation of the launching site will facilitate recovery of the bridge.

e. See TM 5–216 for technical details pertaining to the AVLB.

107. Army Aviation Support

The battalion task force will habitually receive Army aviation support from the brigade to which attached or from the division aviation battalion. (See FM 17–1 for discussion of the Army aviation support available to tank units.)

108. Employment of Tactical Nuclear Weapons

Armor units may employ tactical nuclear weapons from organic means or from those provided by higher echelons. The decision to employ nuclear weapons is delegated to the commander to whom the weapons have been allocated. Plans for employing nuclear weapons are integrated into the scheme of maneuver to ensure the most efficient use of available combat power. Troop safety measures and other limiting requirements will be in unit SOP's or as indicated by the guidance of the commander employing the weapons. (For a discussion of nuclear weapons employment, see FM 101–31. Appendix II contains details of employment for Davy Crockett weapons.)

109. Employment of Chemical Agents

See FM's 3–5 and 17–1.

CHAPTER 7
OFFENSE

Section I. GENERAL

110. General

This chapter contains guidance for the employment of tank units in offensive combat. The methods and techniques of the attack presented are those normally employed by tank units. Emphasis is placed on the formation and employment of mobile combined arms battalion task forces and company teams.

111. Types of Offensive Operations

Tank units when organized for combat, may participate in a penetration (including infiltration), envelopment (including turning movement), and exploitation (including pursuit), or as a covering force for a larger unit. (See FM 61–100 and FM 17–1 for a detailed discussion of the types of offensive operations.)

a. An attacking force usually employs two elements: the maneuvering force and the base of fire. The maneuvering force closes with the enemy by maneuver and destroys him by fire and shock action. The base of fire pins the enemy to the ground and neutralizes his weapons, thereby permitting freedom of action by the maneuvering force.

b. A third element—the reserve—may be constituted when the tactical situation requires. The reserve is an offensive weapon used by the commander to exploit success, repel a counterattack, and retain the initiative. The tank battalion task force commander may designate a reserve when required; the tank company team commander rarely will have sufficient forces available to permit retention of a reserve without weakening the attack by maneuvering elements. When a reserve is not designated, uncommitted elements may be considered as a reserve for a battalion task force or a company team.

112. Combat Support in the Offense

a. Artillery.

(1) The following artillery fires are provided for support of offensive operations.

(*a*) *Support during movement to the attack position.* Although fire against hostile weapons is still of great importance at this point, neutralization fires on known and suspected enemy positions, and covering fires for mine removal parties, are provided.

(*b*) *Support during the actual attack.* All available artillery fire is used to protect the assault echelon. During the attack, fire is placed on observation posts, enemy artillery, targets of opportunity, and areas of resistance (fig. 54). When tanks and mounted mechanized infantry compose the first force to reach the objective, they may be supported by artillery air bursts until the mechanized infantry dismount.

(*c*) *Support during consolidation and reorganization.* Artillery assists in the protection of forces consolidating and reorganizing on the position by massing fires as needed on threatening hostile elements, by counterbattery, and interdiction.

(*d*) *Support against counterattack.* Artillery fire is massed to assist in breaking up counterattacks, especially enemy thrusts from the flanks. Prearranged interdiction fires may be delivered on routes of approach.

(2) The artillery liaison officer (fire support coordinator) performs the detailed tasks incident to planning fire support for the battalion task force. He coordinates the organic fire support capabilities (battalion mortars and Davy Crockett weapons) of the battalion, as well as that support provided by artillery, and tactical aviation. At company level, the artillery forward observer assists the company commander in fire support coordination functions.

b. Engineer. See FM's 5–135 and 17–1 for details pertaining to engineer support.

c. Tactical Air Support. See FM 17–1 for details pertaining to tactical air support.

d. Army Aviation. See FM's 17–1 and 1–15 (when published) for details pertaining to Army aviation.

e. Battalion Mortar and Davy Crockett Platoon. The platoon supports the attack by firing on targets that cannot be engaged by flat-trajectory weapons, and by providing nuclear fires and screening smoke. Fires of the platoon are coordinated with the fires of artillery (app. II).

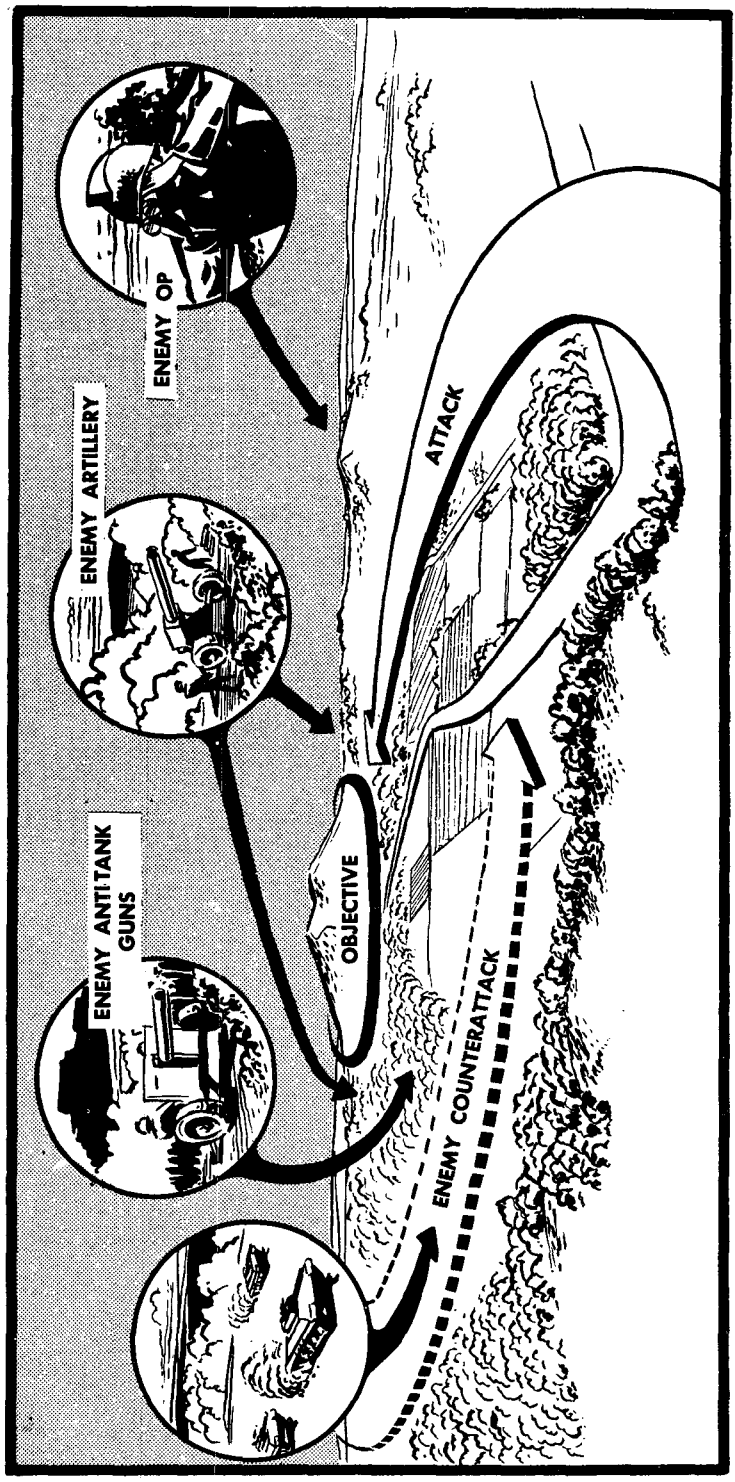

Figure 54. Artillery support for the attack.

113. Security

Tank unit commanders must provide for the security of their units during the preparation for, and the conduct of, the attack. After considering all available information, the commander determines the requirement for security and fulfills that requirement with the minimum forces necessary. Security must be provided during the occupation of the assembly area, the conduct of the attack, the consolidation of the position, the reorganization of the unit, and the continuation of the attack. Security is provided both by assigning security missions to specific parts of the attacking unit and by the formation adopted for the attack. Depth in the formation gives added security; unengaged elements can maneuver to meet enemy threats. Security may also be obtained by echelonment of a unit to a threatened flank. Security for the maneuvering force may be provided by troops used in the base of fire.

114. Formation for the Attack

a. The initial formation for the attack, and subsequent changes to the formation, are based upon the factors of METT (mission, enemy, terrain and weather, and troops available).

b. A formation with depth permits greater flexibility in the employment of the attacking force. It also assists in maintaining the momentum of the attack; however, the primary consideration in selecting a formation is that the commander must be able to place all available fire upon the objective at the decisive time.

c. An attack in depth is favored:

(1) Against deep objectives.

(2) When the enemy situation is vague, and major enemy strong points or troop locations are not known.

(3) When a requirement exists for security against a counterattack.

(4) During periods of poor visibility when maximum control is desired.

d. A formation with less depth is favored:

(1) Against limited objectives.

(2) When major enemy strong points and troop concentrations are known.

(3) When the objective is strongly held by the enemy, and there is a requirement to place maximum fire upon the objective.

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(4) When the situation requires maximum freedom of action by subordinate units.

e. See chapter 2 for a detailed discussion of tank battalion, company, and platoon formations.

115. Control Measures

a. The control measures used by tank units in the offense may include: assembly area, axis of advance, direction of attack, zone of action, line of departure, phase lines, checkpoints, and objectives. An attack position may be used, when required; however, if used, it is occupied for a minimum time, usually just enough for tactical elements to deploy. (See FM 17–1 for a detailed explanation of control measures and their use.)

b. The fundamental consideration in the selection of control measures for an attack is that the least restrictive measures possible should be used to allow maximum freedom of action to subordinate units. A commander selects only those that provide him the requisite degree of control without hampering the actions of his subordinates.

Section II. PREPARATION AND PLANNING FOR THE ATTACK

116. General

The success of an attack by a tank unit may depend to a large degree on the deliberateness of the planning preceding the operation. Well-conceived plans, violently executed, will result in successful accomplishment of the unit mission. This section prescribes techniques of planning and preparing for an attack by a tank unit.

117. Troop Leading Procedures

The commander of a tank unit normally receives his mission from a higher commander, who specifies the composition of the unit for the projected operation. The commander then must prepare to receive troops placed at his disposal. The commander follows the basic steps in troop leading in preparing for the attack. (See FM 17–1 for a discussion of troop leading procedures.)

118. Plan of Attack

a. General. After the commander has completed his estimate and arrived at his decision, he completes his plan of attack. This plan is simply a detailed translation of the fifth step of the estimate—the decision. At battalion level, details usually are

worked out by members of the staff; at company level, the company commander may be assisted by artillery and mortar forward observers and commanders of any attached unit. Subordinate commanders must be kept informed of the part they will perform in the plan, to insure adequate time for them to complete their reconnaissance and plan the details of their action. The plan of attack is designed to insure teamwork and coordination within the attacking force throughout the operation. The plan must be simple, but it must cover all essential details. It includes the scheme of maneuver and the plan of fire support.

b. Scheme of Maneuver. The scheme of maneuver is the detailed plan for the placement and movement of subordinate units in carrying out the mission. The scheme of maneuver is designed to move or place the various elements of the attacking force into advantageous positions with respect to the enemy or the objective. In developing the scheme of maneuver, consideration is given to its possible effects on future operations. It includes:

(1) Task organization.
(2) Objectives.
(3) Formation.
(4) Direction of movement.
(5) Line of departure.
(6) Time of attack.
(7) Attack position (if used).
(8) Other control measures as appropriate.

c. Plan of Fire Support. A well-coordinated plan of fire support covers all available fires, including those of organic and attached weapons, tanks, and supporting artillery, plus tactical air and nuclear weapons. Fires support the advance, lifting or shifting at the last possible moment to keep enemy troops fixed until the assault elements are upon them. These fires must lift or shift at the last possible moment but soon enough to prevent losses to friendly troops. The plan of fire support must be highly flexible. Enemy positions located before the attack are destroyed or neutralized by prearranged fires. In larger units, the plan of fire support is issued as an annex to the operation order. Complete details for fire support planning are contained in FM's 6–20–1 and 6–20–2.

119. Battalion Task Force—Preparation for Attack

a. The tank battalion commander is assigned his mission by the next higher commander who will have allocated necessary tactical support and administrative support to the battalion for

accomplishment of the mission. Upon being assigned his mission, the battalion commander accomplishes his troop leading procedure assisted by his staff, fire support representatives, and commanders of attached units. To these assistants, the battalion commander announces his concept of the operation, including a tentative scheme of maneuver and general plan of fire support as early as possible during the planning phase, so that they can prepare recommendations relative to their areas of interest.

b. Based on his estimate and the recommendations of his staff, fire support representatives, and commanders of attached and supporting units, the plan of attack is prepared and formalized into an operation order, oral or written, to elements of the battalion task force. When time permits, usually at the beginning of an operation, a complete written order is issued. After the operation has begun, oral fragmentary orders are used to effect changes and to continue the attack.

c. While the key commanders and staff officers of the battalion are conducting their troop leading, the battalion elements normally are located in assembly areas in which administrative preparations (maintenance, supply, etc.) for the coming operation are accomplished. As troop leading is completed, final checks are made so that the battalion can move directly into the attack, avoiding unnecessary delays.

d. Planning and preparations are accomplished to the degree that time permits. In fast moving situations in which there is little time for planning and detailed preparations, the battalion must enter the attack rapidly through the use of fragmentary orders and abbreviated troop leading.

120. Tank Company and Platoon—Preparation for the Attack

a. The tank company may attack as a company or as a tank company team of a battalion task force. The battalion order assigns the company mission, objectives, and other control measures and designates the supporting and attached units, along with other pertinent details that the company commander must know to accomplish the mission.

b. Before an attack, the tank company team may assemble in an assembly area designated by the battalion commander. Here, detailed preparations for the attack are completed. When the tank company team attacks from march column to exploit a situation it normally moves directly into the attack without occupying an assembly area. However, if time and the enemy situation permit, the tank company team normally uses an assembly area and

a line of departure, and will designate an axis of supply and evacuation, in executing an attack on a designated objective. An attack position may be used when required.

c. Normally, while the company team is preparing for the attack, the company commander joins the battalion commander to receive the operation order. He usually takes with him the individuals necessary to plan the attack (artillery and mortar forward observers, commander of attached units, communication chief, and a messenger). The executive officer normally remains with the company team and makes certain that the unit is ready for combat. All vehicles and weapons are inspected; company radio nets are checked, and the necessary supply of ammunition, fuel and lubricants, and assault rations is accomplished. If the company is attached to another unit, the company commander reports to the commander of that unit. Commanders of any units or elements attached to the tank company team report to the company commander. The application of these techniques to all attacks is limited by the time available for preparation and planning the attack.

d. The tank company commander's preparations for the attack normally consist of coordination with units of other arms, planning and conducting a reconnaissance (fig. 55) making an estimate of the situation, forming a plan of attack, issuing his oral operation order, and moving the company to the line of departure. At all times, he actively supervises the execution of preparations and orders.

Figure 55. Commanders of units in the company team make their reconnaissance together.

e. The tank company commander develops his plan of attack in conjunction with the platoon leaders and the artillery and mortar forward observers. He already has decided, from his estimate of the situation, which course of action is best for his company. The plan of attack will include the *who, when, where,* and if appropriate, *how* and *why* details of the company's actions in carrying out the assigned mission. In developing the plan of attack, the company commander should consider how he will organize and maneuver his force to accomplish the mission, and how he can best use the available supporting fires (fig. 56).

f. Operation orders should be complete, covering all details of the operation. Brevity is desirable, but clarity must not be sacrificed. Oral orders, fragmentary orders, and warning orders are considered standard for tank unit operations. If possible, orders should be issued at a point from which the area of pending operation can be seen; otherwise, the order is issued in the assembly area. Orders should be issued as early as possible to permit dissemination and to permit time for reconnaissance, liaison, and planning. (For additional discussion of orders, see FM 17–1.)

g. Platoon leaders accomplish their troop leading in the same general manner as the company commander.

h. The company team and its platoons leave the assembly area at the time prescribed by the battalion commander. Movement to the line of departure or attack position, if used, is conducted as a tactical march.

Section III. CONDUCT OF THE ATTACK

121. General

The attack is conducted through the application of fire and maneuver and fire and movement.

a. Fire and Maneuver. Fire and maneuver is a technique employed by the commander conducting the attack, who establishes a base of fire and designates a maneuvering force. These two distinct forces have separate missions. The mission of the maneuvering force is to close with and destroy the enemy by fire and shock effect. The mission of the base of fire is to pin the enemy to the ground and neutralize his weapons, thereby permitting freedom of action by the maneuvering force. The base of fire normally *does not join the maneuver force* in the final assault against the objective.

(1) The base of fire may consist of organic mortars, supporting artillery, tactical air, and naval gunfire.

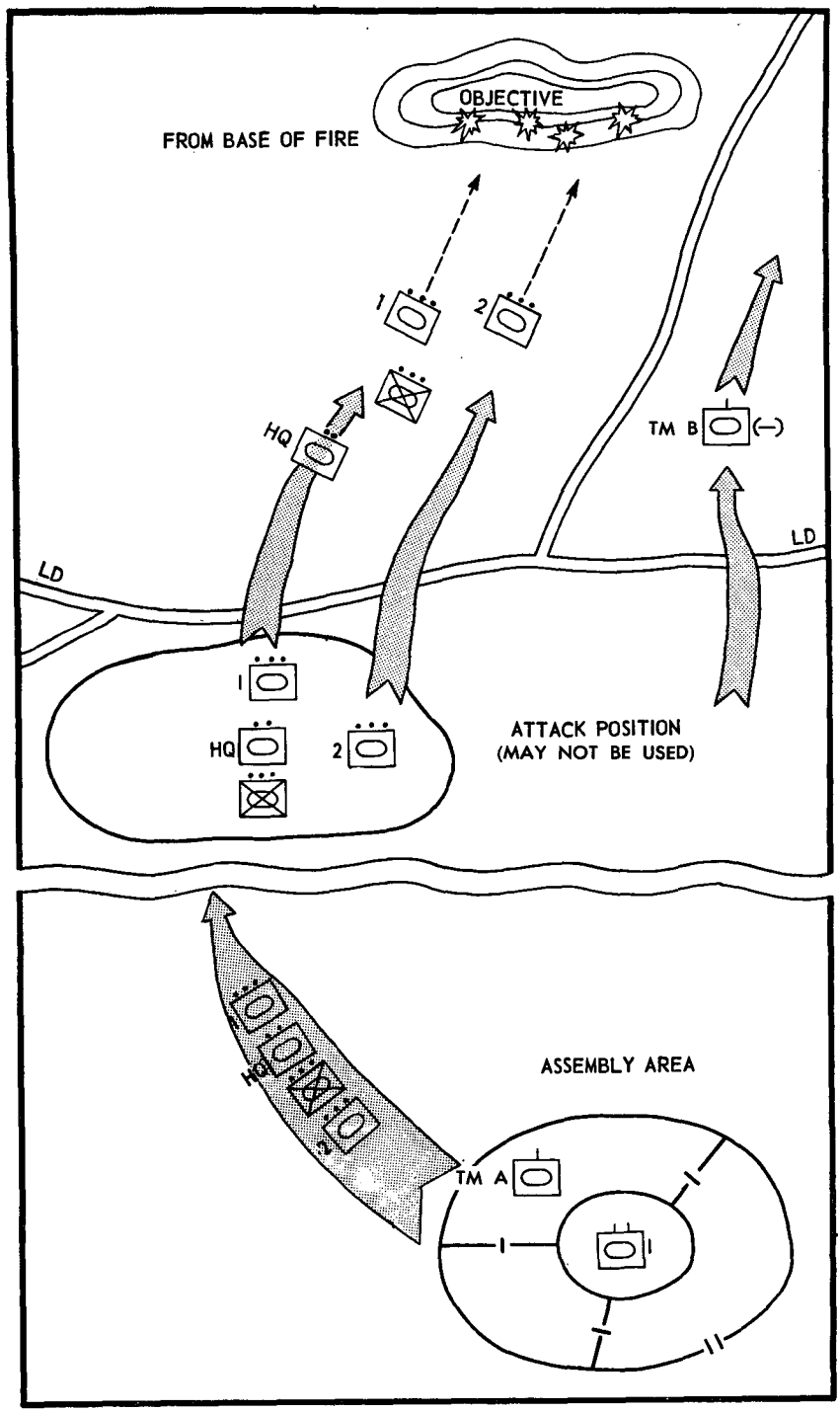

Figure 56. Tank company team plan of attack.

(2) The maneuver force will consist of all available tank and infantry units.

(3) The use of tanks in a base of fire is justified *only* when terrain precludes their employment in the maneuvering force.

b. Fire and Movement. Fire and movement is a technique employed by, and within, the maneuvering force when movement in mass is not feasible. In fire and movement, one element of the maneuvering force covers by fire the advance of the remainder of the maneuvering force. Fire and movement are alternated only as is necessary until the entire maneuvering force can resume the attack in mass. The use of fire and movement is temporary, is *not* habitual and should *not* be used as a method of advance from the LD to the objective regardless of the type and strength of enemy opposition. Conditions which may justify the use of fire and movement are:

(1) When terrain restrictions do not permit mass tank deployment.

(2) When fire support provided by the base of fire is inadequate.

(3) When the maneuver force is engaged with a *known* enemy force capable of inflicting *unacceptable* losses against an attack in mass.

122. Conduct of the Attack by the Maneuvering Force

a. The maneuvering force, composed of all available tanks and infantry units, moves in mass from the LD to the objective. In this respect, mass is with reference to movement without fragmentation of the force while recognizing proper dispersion of and within the force. This technique of movement capitalizes on the strength of the tank, maximizes shock effect, and reduces vulnerability to enemy fires.

b. The maneuvering force must close on the objective in the shortest possible time with maximum combat power. The longer the force is exposed to enemy fire, the greater will be the losses. Movement is made by routes affording the best available cover and concealment. Rapid movement while supported by all available fires multiplies the effect of the firepower and shock effect possessed by the maneuvering force. If the maneuvering force is caused to employ fire and movement, aggressive action must be taken to insure that the movements are executed rapidly and that the entire force continues to advance on the enemy. At the earliest

opportunity, as the situation permits, or in preparation for the assault, the advance in mass is resumed.

c. The maneuvering force places maximum fire on the enemy as soon as it is within effective range. This fire reinforced by all available supporting weapons, denies the enemy observation and movement, and destroys his troops and defenses.

123. Technique of Fire and Movement

a. Whenever possible, tanks advance in mass. They proceed to the objective as rapidly as possible.

b. The tank platoon is the smallest maneuver element in a tank company. When a tank unit, employed as a maneuver force, cannot advance in mass, due to inadequate fire support provided by the base of fire or engagement with a *known* enemy force capable of inflicting *unacceptable* losses, against an attack in mass, the advance must still continue. Since the tank does not have a stabilized gun, the maneuver force now in need of direct fire, is obliged to advance with fire and movement. Movement is accomplished by bounds, one element covering by fire the advance of the other element. This technique is alternated between elements within the maneuvering force only as is necessary and at the earliest opportunity as the situation permits, or in preparation for the assault, the advance in mass is resumed.

c. Terrain restrictions may not permit the maneuver force to advance in mass consistent with proper dispersion. Under this condition the maneuver force may advance using fire and movement until the terrain will support the advance in mass.

d. A bound is a movement from one position to another in which one element advances to a predesignated limit, covered by a rear element. The length of each bound is determined by the effective range of the weapons covering the advance, the location of suitable terrain features, and visibility. Generally, the larger the element making the bound, the longer the bound. The advance may be made by either of the following methods.

(1) *Successive bounds.* In this method the leading element, covered by fires of the rear element, advances to the limit of the first bound and takes up positions to support the advance of the rear element. The rear element, upon arriving at a position abreast of the leading element, halts and supports by fire the advance of the leading element to the limit of the second bound. This operation is repeated as many times as necessary. This is the slower of the two methods.

(2) *Alternating bounds.* In this method the leading element halts at the limit of the first bound and takes up positions to support by fire the advance of the rear element, which then advances to the limit of the second bound and takes up positions. The initial leading element then advances to the limit of the third bound.

124. Battalion Task Force—Conduct of the Attack

a. The battalion task force crosses the line of departure at the time prescribed by the brigade operation order. When preparatory fires are used, all available artillery, mortar, and Davy Crockett fires commence just before or as the battalion begins its attack. If a nuclear preparation is used, it is normally fired before the conventional fires. Only necessary combat and combat support elements will move to the line of departure as the attack begins. Reserves, other combat support, and administrative support elements are moved forward after the leading company teams have begun their attack.

b. The battalion task force commander controls fire support and the movement of his company teams.

c. As leading elements advance, supporting fires are lifted or shifted, usually by the forward observers accompanying the company teams. The company teams, moving in mass, close onto and assault their objectives.

d. Throughout the attack the leading company teams make maximum use of all available supporting fires. Indirect fire weapons may displace by echelon to provide continuous support or, particularly in mobile operations, move on-carrier until needed. Radiation detection teams with attacking companies report dangerous radiation areas. These areas are bypassed or crossed rapidly in vehicles to reduce radiation exposure.

e. The reserve, if constituted, normally follows the maneuvering company teams. The reserve may be so placed in the formation as to provide security for the command; this is especially true of an element that is considered a reserve merely because it has not been engaged. The reserve is located in best position from which it can perform its mission, support the attack, or cover the flanks. As soon as the maneuvering force reaches the objective, the reserve may close on to the position to assist in consolidating and repelling counterattacks. The commander of the reserve keeps abreast of the situation by liaison and observation. He continually formulates plans to cover the commitment of his unit to any type of action or mission.

125. Tank Company Team and Platoon—Conduct of the Attack

a. The tank company team crosses the line of departure in an attack formation at the time prescribed in the battalion operations order. Supporting fires are used to fix the enemy in his position and cover the maneuver of the team. The company team commander normally moves the entire team in mass. When conditions exist as noted in paragraph 121, the team commander may employ fire and movement. When the situation permits or in preparation for the assault, the company team resumes the advance in mass. Enemy resistance that does not constitute a threat to the accomplishment of the company team mission may be engaged by organic weapons and supporting fires and, with the permission of the battalion commander bypassed.

b. The tank platoon crosses the line of departure in an attack formation at the time prescribed by the company commander. The platoon moves in mass and participates in fire and movement, as part of the company team.

c. A tank company commander with the maneuvering force controls the advance of his platoons. He keeps his battalion commander advised of all changes in the situation. He obtains artillery and mortar support through the artillery and mortar forward observers with his company, either on his own initiative upon encountering heavy resistance or at the request of a platoon leader. Similarly, air strikes and Davy Crockett fires may be requested through command channels.

(1) A tank platoon leader with the maneuvering force controls his unit in the attack on the objective. While maintaining his platoon's place within the maneuvering force, he will vary the platoon formation to meet changes in the situation confronting him. His major concern is to push the attack.

(*a*) The platoon leader's tank is a fighting vehicle constituting 20 percent of the platoon's firepower. The platoon normally fights as a unit with the platoon leader directing the action of his five tanks; his tank is not merely a platoon headquarters. The platoon leader exercises command over the entire platoon. While the platoon leader fights his tank, he has two constant considerations: he must not become so involved in fighting his own tank that he forgets to control the action of the whole platoon; his actions must not indicate to the enemy that his is a command tank. When the platoon leader is fully occupied in fighting

the platoon as a whole, he can assign his gunner a sector of fire, with the gunner firing at about the same rate as the rest of the tanks. The platoon leader positions his tank within the platoon where he can best control and influence the action. He observes in all directions, noting any evidence of enemy activity and the progress of other friendly units and keeps his company commander informed of the terrain and enemy resistance encountered, reporting any changes in the situation.

(*b*) Upon meeting strong resistance or targets that his tanks cannot engage effectively, the platoon leader requests supporting fires through his company commander. He adjusts artillery and mortar fire if a forward observer is not available, and requests other fire support as required through command channels.

(2) The actions of the tank commander in the conduct of the attack include:

(*a*) Direct the movement of the tank in a sound tactical manner.

(*b*) Direct the fire of the tank weapons.

(*c*) Maintain contact with the platoon leader (visual or radio).

(*d*) Make constant battle reconnaissance.

(*e*) Keep the platoon leader informed of the situation.

d. The company teams and platoons press the attack as rapidly as possible using all available fire support. As elements reach a position at or in front of the objective (or enemy position) the assault is begun.

126. Assault on the Objective

The assault of the objective may be made employing one of three methods (par. 83). (Whichever method is used, the tanks destroy enemy groups, defensive works, weapons, and emplacements by direct fire. The riflemen close with and destroy the enemy in close combat and protect the tanks from individual antitank weapons.) Each rifle squad is located in a formation according to the directions of the mechanized rifle platoon leader. Supporting fires increase as the company and its platoons close on the objective. They shift to isolate the objective as the company team begins the assault. As soon as the assault starts, the tanks advance onto the objective, firing their machineguns. Armored personnel carrier machineguns may be used to support the assault

until masked by advancing riflemen. Infantrymen use assault fire to close with the enemy. During the assault, the tanks provide support for the infantry, who will be mopping up on the objective. The tanks advance to the far side of the position, where they prepare for a possible counterattack and for the continuation of the attack to the next objective. (See ch. 4, for methods and techniques of employing tanks and mechanized infantry in the assault.)

127. Actions on the Position

a. General. The actual occupation of the objective is the critical stage of the attack. This is the stage during which control is most difficult and the time when an aggressive enemy delivers a carefully planned and coordinated counterattack, covered by all available supporting fires. When an armor unit has assaulted and seized an assigned objective, it enters into activities called "actions on the position." These actions are *consolidation* and *reorganization.* In nuclear warfare, the actual seizure of the objective may often be followed by either a continuation of the attack or a rapid move to dispersed locations from which the unit can dominate the position, but avoid presenting a lucrative nuclear target. Such actions will be in accordance with plans made by a higher commander.

b. Battalion Task Force—Consolidation. Consistent to the degree possible with previous plans, and as soon as the assaulting forces have seized the objective, the following actions are taken:

(1) Eliminate any remaining enemy pockets of resistance.

(2) Prepare to meet counterattacks. Elements of the force take up defensive positions on terrain controlling avenues of enemy approach. Elements not required for this task disperse to other locations to avoid presenting a lucrative nuclear target.

(3) Prepare to continue the attack. The commander makes a map and visual reconnaissance of the future area of operations, issues necessary fragmentary orders to subordinates.

(4) Improve defense posture. Elements of the force on the position continue to organize and improve their defensive posture until ordered to continue the advance. Plans for repelling enemy counterattacks also continue.

c. Company Team Consolidation. As soon as leading elements of the assaulting forces reach the objective, the following actions are taken with the greatest possible speed to destroy remaining

enemy resistance, prepare to move to dispersed locations, avoid presenting nuclear targets, or to continue the attack on order.

(1) The leading tanks take up deployed positions from which they can dominate the position and destroy visible enemy weapons and troops by fire (fig. 57). Tank commanders employ hand grenades against dug-in enemy troops where the use of the tank guns might endanger friendly troops. If enemy tank hunters are active, the leading tank unit commander may request artillery and mortar airbursts over his position until friendly infantry arrive (fig. 58). Both tanks and infantry should avoid the sky line; tanks must not cruise aimlessly.

(2) As he arrives on the position, each tank platoon leader goes to his assigned sector and takes up a position where he can regain visual contact with, and full control of, his platoon. As the remaining tanks of his unit arrive, he assigns them general position areas and sectors of fire. He establishes local security, posting observers to warn of enemy activity and contacting friendly units on his right and left (fig. 59). The company takes immediate action to:

(*a*) *Hold the position against counterattack.* The subordinate unit's security measures are coordinated to provide for all-round observation and defense. Tanks are positioned to cover the logical avenues of enemy approach. The mechanized infantry organize hasty defensive positions. Through the artillery and mortar forward observers, arrangements are made for supporting fires to protect the newly captured positions.

(*b*) *Continue the attack.* The tank company commander makes a map and visual reconnaissance of the terrain between him and the next objective and issues any fragmentary orders that may be necessary. Whenever necessary, guides are sent back to meet supply trucks, company maintenance section, and medical aidmen. No action will be taken, however, that will interfere with immediate preparations for continuing the attack.

(3) Troops on the position continue to organize and improve their defensive arrangements until ordered to continue their advance. Measures to be employed against enemy counterattacks are determined before the attack and are included as part of the attack order.

c. Reorganization on the Position. Reorganization pertains to

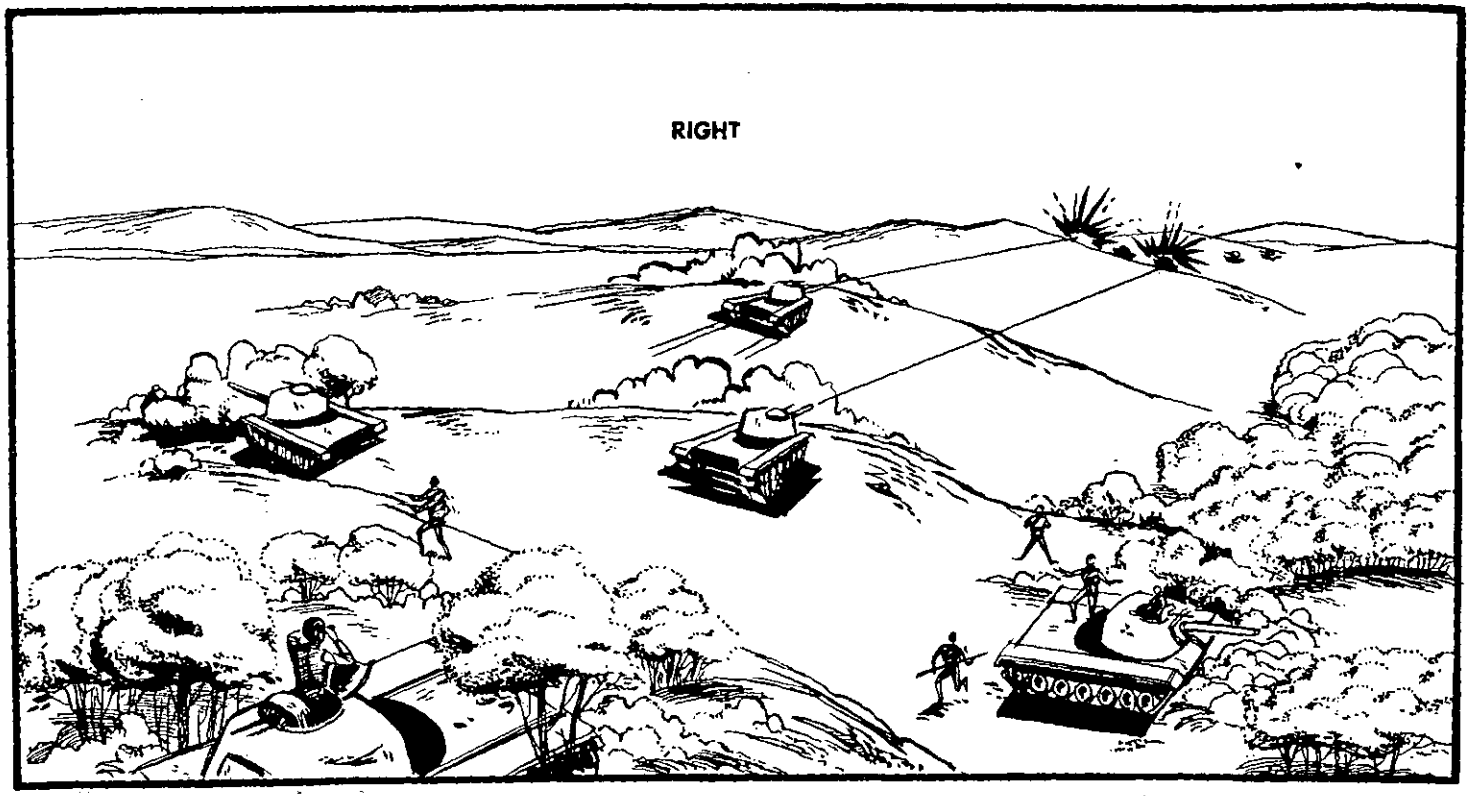

Figure 57. The leading tanks take up deployed positions from which they can dominate the position, and destroy visible enemy weapons by fire.

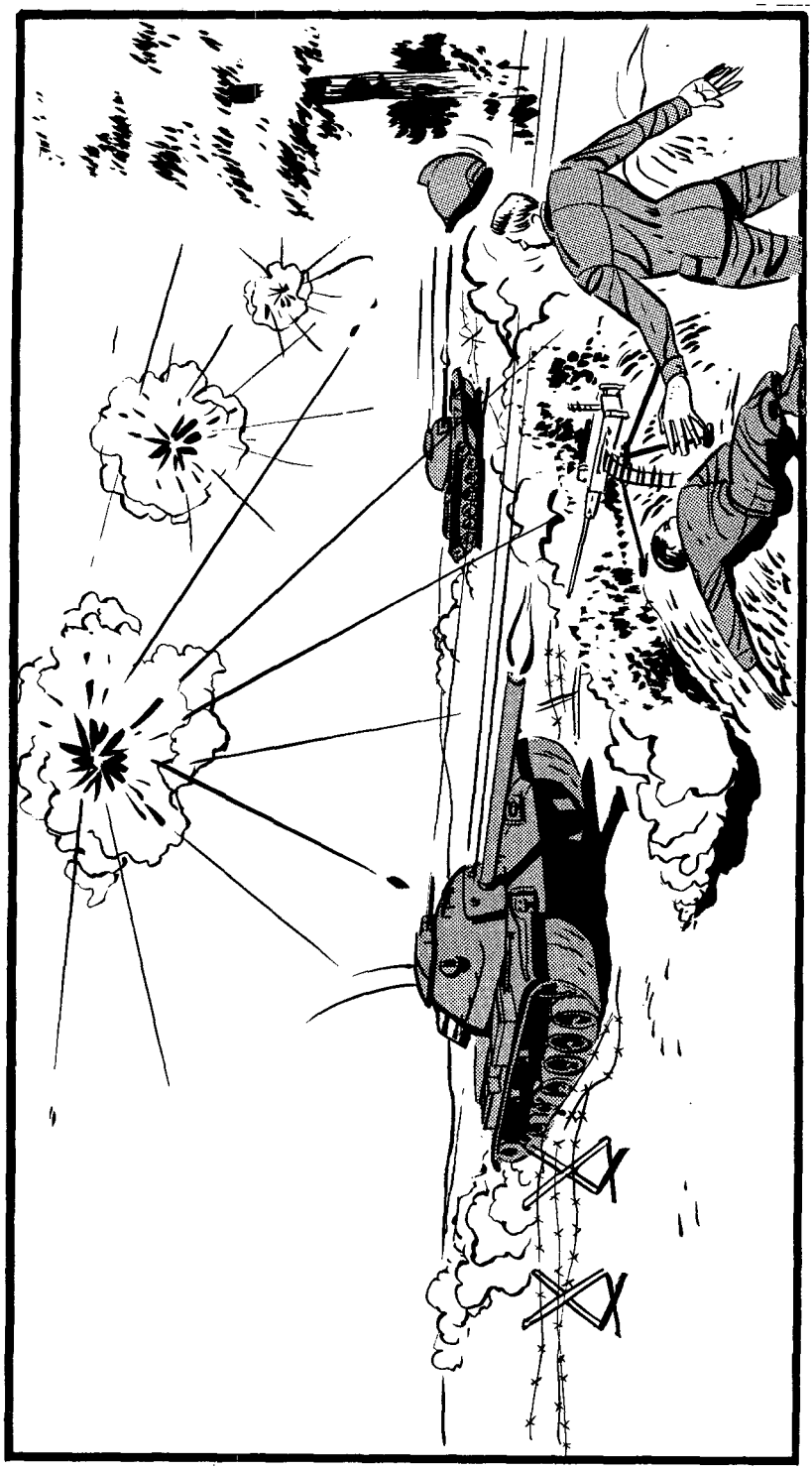

Figure 58. Tanks on the objective under artillery and mortar air bursts.

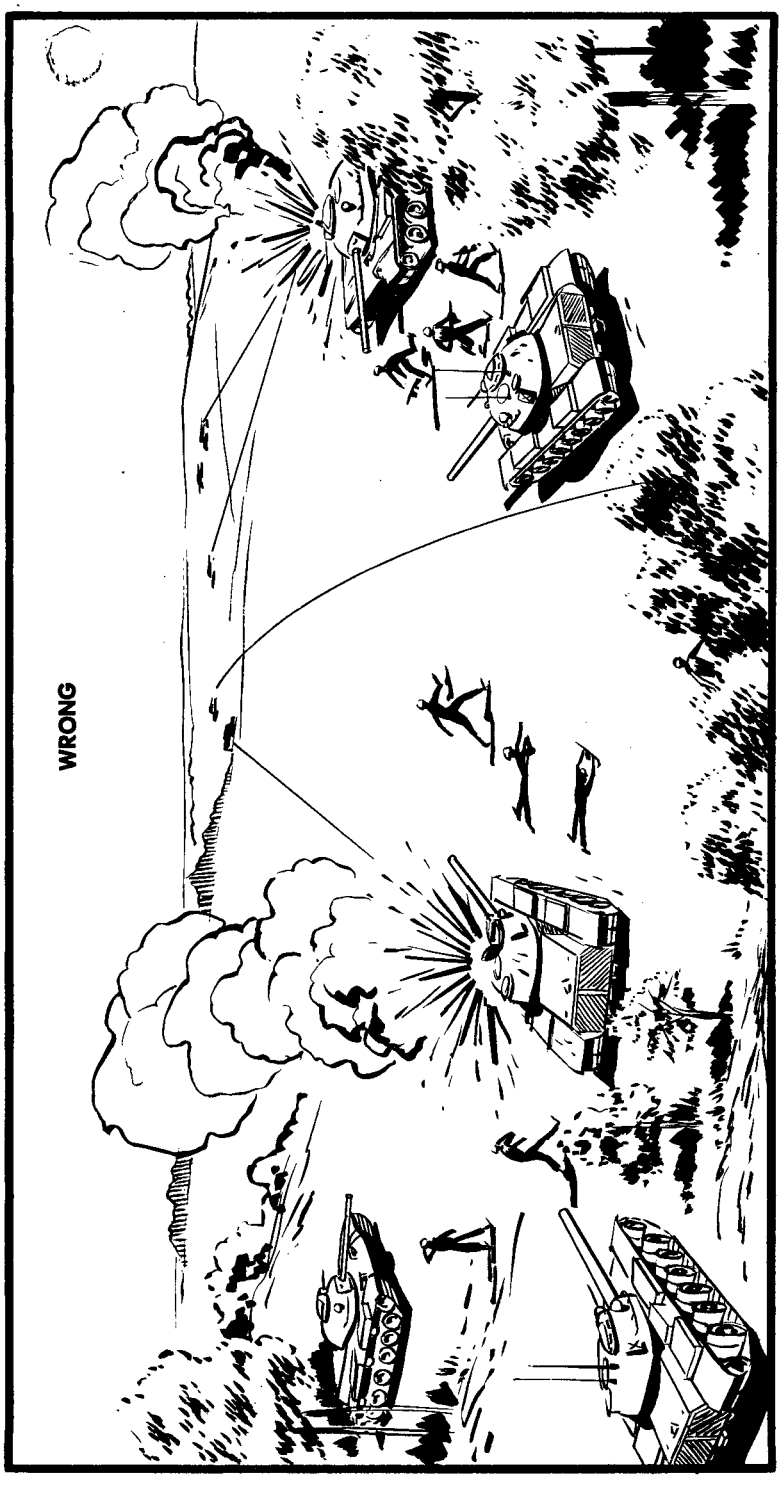

Figure 59. Tanks should rally on the objective within visual distance without crowding together. Servicing should be done only after security measures have been taken against counterattack.

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the unit. It includes all the actions taken to restore maximum combat effectiveness and control. It may include:

(1) *Reports.* All subordinates report accomplishment of their mission, and the status of troops, equipment, and supplies.

(2) *Replacement of casualties.* So far as possible, losses are replaced.

(3) *Evacuation.* Arrangements are made for the evacuation of troop casualties, prisoners of war, and damaged equipment.

(4) *Supply.* Ammunition and equipment are redistributed as required; requests for additional ammunition, fuel, and other supplies are initiated; any supplies received are issued if time permits.

(5) *Communication.* Contact is restored with any units temporarily out of communication.

Section IV. EXPLOITATION

128. General

Exploitation is a type of offensive operation. It may follow other types of successful offensive operations. Exploitation takes full advantage of success in battle and is dependent upon retention of the initiative. *Pursuit* is a phase of exploitation that has as its primary purpose the capture or destruction of a retreating enemy force.

129. Characteristics of the Exploitation

a. General. An exploitation force operates through a gap or around a flank and usually is assigned a physical objective deep in the enemy rear. The exploiting force strives to reach the objective with maximum force in the shortest possible time. The exploiting force does not concern itself with any actions of the enemy except those that could seriously interfere with, or prevent accomplishment of, the assigned mission. Thus, enemy forces frequently are reported and bypassed with the permission of the next higher commander. Terrain permitting, exploitation forces advance on a broad front.

b. Enemy Situation. When the exploitation stage has been entered, the local enemy situation will almost certainly be one of confusion and partial disorganization. The rapid continuation of exploitation will further cause the enemy dispositions to disintegrate. Enemy resistance will consist mainly of delaying actions

by small units, defense of scattered dispositions, and reliance on obstacles, both defended and undefended. As the attack penetrates deeper into the enemy's disposition, his disorganization increases proportionately.

c. Objectives. Objectives in enemy rear areas include:

(1) Enemy reserves and artillery.

(2) Command, communication, and supply installations.

(3) The rear or flank of strongly held positions.

(4) Vital terrain features or critical points, such as defiles, road junctions, railroad centers, and bridges.

(5) Linkup with friendly airborne forces.

(6) Nuclear delivery agencies or storage sites.

d. Freedom of Action. After entering the exploitation phase, the tank unit commander should have greater freedom of action than before, because the rapidity of the attack necessitates instant decisions. However, when it is necessary for him to make major deviations from the original plan, permission must be requested from the next higher headquarters.

e. Nuclear Support During the Exploitation. Nuclear weapons increase the speed of the advance. Used in conjunction with relatively small forces they can eliminate resistance that might otherwise require deployment of a sizeable force. In the exploitation, nuclear fires are used principally on targets of opportunity. These fires are used to destroy hostile reserve, and seal enemy escape routes. When nuclear fires are used, the tank unit commander's main concerns are to:

(1) Take adequate precautions for the safety of his unit when in the vicinity of friendly detonations.

(2) Integrate nuclear and nonnuclear fires.

(3) Exploit the effects of friendly nuclear weapons so employed.

(4) Ensure that effects such as tree blowdown, rubble, and secondary fires do not interfere with the maneuver of the force.

f. Organization of the March Column. The exploiting force must be so organized as to permit rapid deployment into effective attack formations from march column.

g. Attacking Enemy Dispositions. The exploiting force must destroy quickly enemy dispositions that its leading elements surprise, or that are lightly held. The leading elements quickly deploy and rapidly close on the strongpoint. Reconnaissance will usually

consist only of observation of the objective and intervening terrain before launching the attack. Orders are disseminated quickly by voice radio. If surprise is not attained, the unit may have to deploy, although extensive preparations are unnecessary unless the enemy is strong. If a strong enemy force is encountered, detailed preparations may be necessary.

h. Command. Command in exploitation depends, to an unusual degree, on aggressiveness, initiative, boldness, an understanding of tactics, constant alertness, and force. A thorough knowledge of the higher commander's plan will assist in carrying out the assigned mission.

i. Control. The column must be kept under control at all times so that it can react quickly and best apply its force. Strict march discipline is a basic requirement.

130. Security in the Exploitation

a. General. Each commander is responsible for the security of his unit. An armor unit engaged in exploitations is, because of its position deep in enemy territory, particularly vulnerable to enemy attack on its flanks and rear and to harassment by small pockets of resistance and guerrilla forces. Therefore, security becomes increasingly important.

b. Security During Movement. On the move, security is provided by security forces; by air and ground reconnaissance to the front, flanks, and rear; by liaison with adjacent units; and by the formation of the column. Administrative support elements in the column are protected by placing combat elements close to them. Depending on the situation, column security may be provided by one or all of the following types of security forces (ch. 5):

(1) *Advance guard.* This normally is used by the leading elements and should be a reinforced tank unit.

(2) *Flank guard or guards.* Units are responsible for their own flank security.

(3) *Rear guard.* This may be a reinforced tank unit or a reinforced mechanized infantry unit.

(4) *Army air vehicles.* Army air vehicles reconnoiter to the front, flanks, and rear.

c. Security at the Halt. When the head of the column is halted, the remainder of the column should continue to move forward, coiling up in available space on each side of the axis and near the head of the column. Elements should group themselves in prearranged formations, ready for instant action in any direction.

Local security measures must be taken. Commanders immediately move to the head of their units to determine the reason for unexplained halts.

131. Composition of Exploiting Force

a. General. In the exploitation, tank units must be capable of performing any type of ground operation, and be able to start an action in the minimum amount of time. They must be so organized that the commander has under his control all elements he may need to accomplish his mission. A battalion task force must include tanks, mechanized infantry, engineers, and adequate administrative support elements; supporting fires must be provided by artillery and organic indirect-fire weapons. Close coordination with supporting tactical air must be achieved.

b. Mobility. Mobility becomes increasingly important during exploitation. Combat and administrative support elements must be highly mobile.

c. Organization. The task organization and order of march are based on consideration of the factors of METT (mission, enemy, terrain and weather, and troops available). The order of march must correspond to the order of anticipated employment (fig. 60).

d. Tanks and Mechanized Infantry. Tanks and mechanized infantry are distributed in depth throughout the column. These units are employed to lead the attack, maneuver to either flank, and secure the column by their positions. A tank-heavy force will normally be the leading element.

e. Command Group. The commander must be well forward in the column, so that he can obtain early firsthand information of any situation arising to the front. His personal observation will permit rapid decisions, formulation of plans, and issuance of orders. The command group normally travels in rear of the leading subordinate unit of the main body.

f. Artillery. The attached or supporting artillery normally remains in column until resistance is met. To insure adequate fire support for the leading elements, artillery should be so placed in the column that it can support the head of the column. An artillery battalion may employ an advanced battery, or the entire battalion may be placed in one position well forward in the column. In either case, it is essential that sufficient tanks and mechanized infantry precede the artillery to crush moderate resistance, to develop the situation in the event of heavy resistance, and to provide protection for the artillery itself.

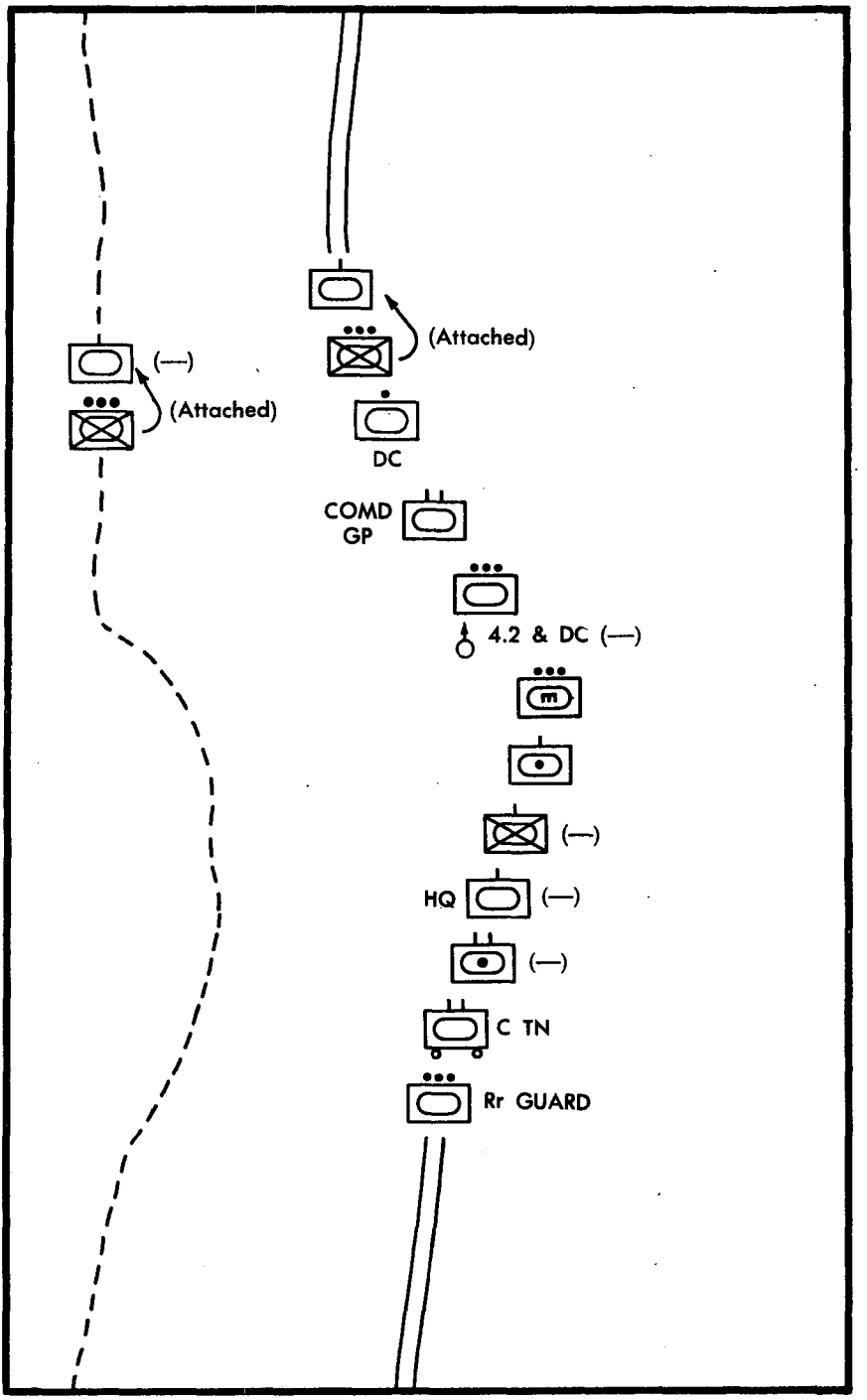

Figure 60. Task organization and order of march, tank battalion task force, exploitation.

g. Engineers. Engineers are positioned well forward.

h. Command Post. The command post is located where its control facilities can be used best in the conduct of operations.

132. Speed in the Exploitation

Speed is essential to successful exploitation. Speed and aggressiveness assist in achieving surprise, a vital factor to success. When the exploiting force moves rapidly, the enemy is seldom able to maneuver his troops to interfere seriously with the exploitation. However, speed must not be confused with haste.

133. Battalion Task Force—Conduct of the Exploitation

a. In the conduct of an exploitation, combat action by the tank battalion task force will consist most frequently of short engagements launched from march column. When resistance is encountered that cannot be quickly overcome, the battalion either launches a coordinated attack or bypasses the resistance. A unit bypasses only with the permission of the next higher commander; this permission may be included in the mission.

b. The battalion will take full advantage of existing routes when conducting an exploitation. Company teams may move on separate routes with the remainder of the battalion following one or more of the leading teams.

c. The exploitation is characterized by fluid situations and an extremely effective form of offense is the attack against successive dispositions (fig. 61). Such attacks are characterized by the employment of elements of the unit against several dispositions in rapid succession—sometimes concurrently. This method of attack can be used to save time when the entire strength of the unit is not needed to take each individual disposition.

(1) Within a battalion task force, company teams may be formed for the attack of successive dispositions. The strength of each company team will vary with enemy strength on the disposition. The operation begins with an attack on the first disposition. As soon as it has been seized, or as soon as the task force commander is certain that the attack force will be able to clear it of enemy troops, he orders the team to attack the second disposition while the mopping-up process on the first is being completed. In a like manner, a third team may attack through or around the team on the second objective, to seize a third disposition. The attack by each team should be supported by the fires of another team if possible.

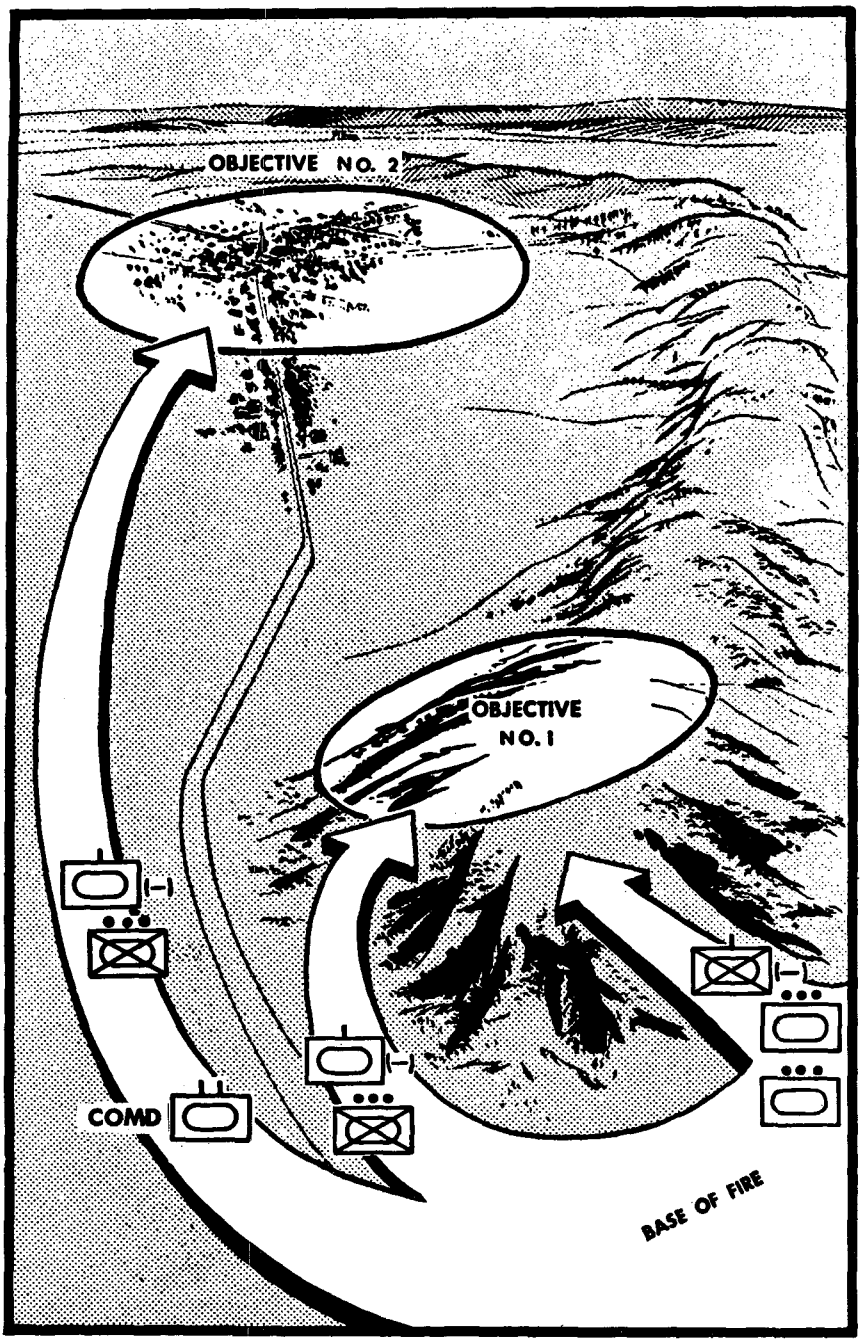

Figure 61. Attack of several objectives in rapid succession.

(2) This method of attack may be used to clear small inhabited areas on the route of an exploiting column. A battalion task force often can clear a series of villages in a relatively short period of time.

134. Tank Company in Exploitation

The tank company normally is used as part of a larger exploiting force. However, when suitably reinforced with mechanized infantry, and tactical support, it is capable of limited independent action, such as reducing isolated strongpoints, seizing and holding critical defiles or key bridges, or acting as a flank guard. The tank company team will normally employ the attack from march column in the exploitation.

135. Attack From March Column, General

The attack from march column differs from the coordinated attack in that there is little time for elaborate preparations, such as detailed reconnaissance and deliberate planning. Instead, the tank unit must attack swiftly and in mass, obtaining the full effect of shock action with a minimum of delay. An attack from march column demands speed and aggressiveness. The initiative must be seized and retained. Lacking specific orders, the company commander or the platoon leader takes whatever action that he believes is required to carry out his assigned mission.

136. Attack From March Column Against Light Resistance

During the exploitation, there are numerous occasions when, because of surprise or inferiority of numbers or armament, the enemy cannot offer serious resistance. Columns of trucks or other vehicles, towed antitank guns, and artillery, infantry, or cavalry in close formation, bivouacs, supply installations, and command post are all profitable objectives. See (par. 90) for the attack against light resistance.

137. Attack From March Column Against Heavy Resistance

a. If the enemy resistance is so heavy and stubborn that the leading elements can make little progress, it may be necessary for them to contain the enemy until other friendly forces arrive.

b. Figure 62 shows an attack from march column by a tank company team against heavy resistance. As the leading tank platoon was unable to overcome the resistance, it continued to develop the situation, and reported the disposition and strength of the enemy to the company commander. The leading platoon, in

this case, provides the time required for the deployment of the remainder of the team. The company commander has the leading platoon continue to fire from its deployed position while the remainder of the team maneuvers. Artillery, Davy Crockett if appropriate, and mortar fires are requested to support this type of operation. Forward observers are usually present with the team, and the fires of the artillery, and battalion mortar and Davy Crockett platoon are included in the plan of attack. The next higher commander may order the resistance to be bypassed, or the team may be required to block or hold the enemy for the maneuver of the team or battalion. If the leading platoon leader or team commander desires to bypass resistance he must obtain permission from the next higher commander.

138. Attack From March Column—Reduction of a Roadblock

a. Most roadblocks will be located at narrow defiles where maneuver is difficult and normally will be defended by antitank

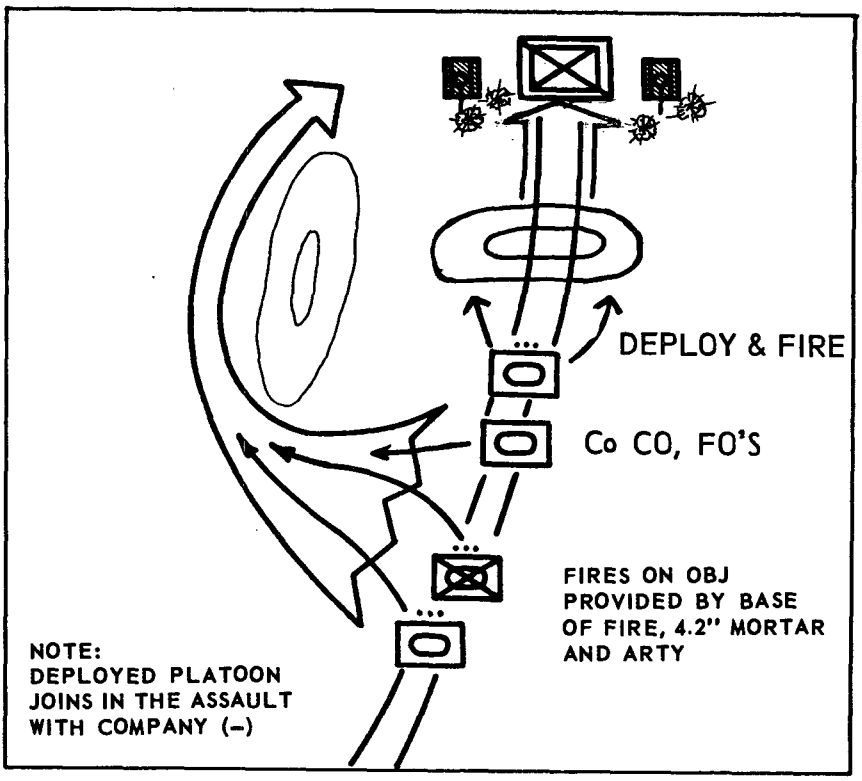

Figure 62. Attack from march column against heavy resistance.

guns, mines, and automatic weapons. The leading tank platoon leader makes a quick estimate and seeks to envelop the roadblock by employing the basic principle of fire and movement. All possible fire is brought to bear on the roadblock and its defenders. If tank maneuver is not possible, he deploys, takes defenses of the roadblock under fire, and reports to the company commander. In many cases mechanized infantry or infantry, along with any accompanying engineers, will be required to reduce the roadblock, with the tanks supporting by fire. Fire support will be requested. No attempt should be made to overrun an obstacle with tanks; it may be mined and booby trapped. However, once the task of removing barriers at the obstacle begins, tanks and tank dozers may be used to advantage to remove bulky objects such as logs.

b. Figure 63 shows an attack of a roadblock by a tank company team. The leading platoon was proceeding along the road in column. When it approached the stream, it encountered a roadblock that was covered by antitank guns and automatic weapons. The platoon leader made a quick estimate, determined that he could not move forward, and reported to the company commander. In this instance, the terrain prevents the tanks from enveloping the enemy position; they support by fire, along with available mortars, Davy Crockett weapons, and artillery, the maneuver of the mechanized rifle platoon. The latter platoon maneuvers through the woods and closes with the enemy. The tanks and artillery then lift or shift their fires according to a prearranged plan. Once the enemy is either destroyed or dispersed, the mechanized rifle platoon and supporting engineers assist the tanks over or around the obstacle and the company continues on its mission.

139. Continuation of the Exploitation During the Night

To exploit success to the fullest, the advance is continued throughout the night. A night advance is conducted in generally the same manner as a daylight advance; however, security forces are strengthened, the distance between vehicles is shortened, and the leading tank elements are more heavily reinforced with mechanized infantry. When enemy resistance is encountered and it is necessary to attack, the attack will be conducted in accordance with the principles set forth for a planned night attack (FM 17–1). The rate of advance is usually slower at night, and supporting fires are less effective, but there is a better chance of gaining surprise.

140. Pursuit

Pursuit is a phase of exploitation to capture or destroy a specific

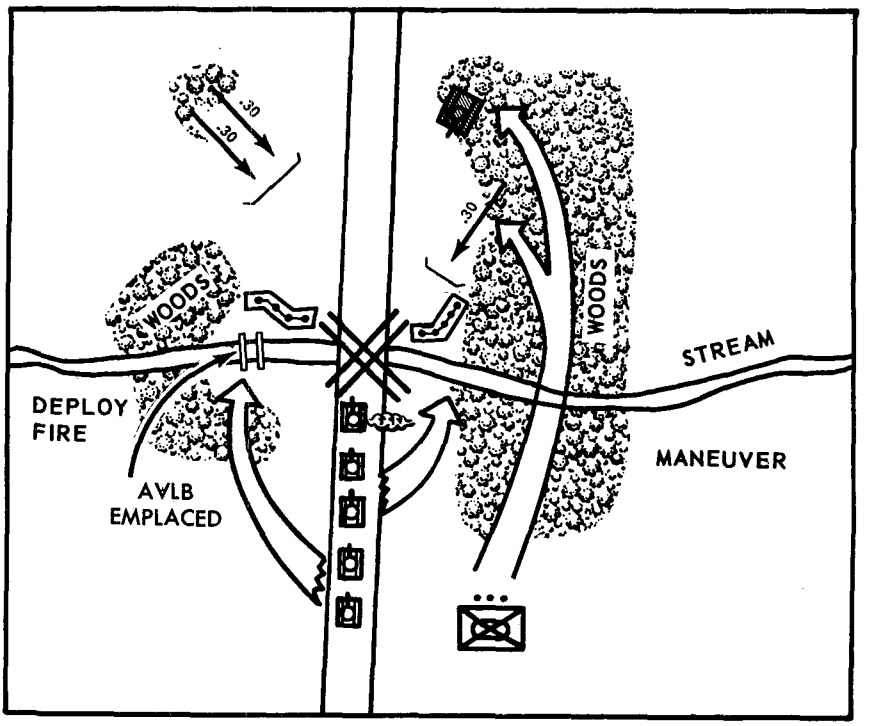

Figure 63. Attack from march column to reduce a roadblock.

body of enemy troops. The enemy troops may be static or moving, and the pursuit force must orient its movement on the enemy concentration. Divisions or brigades may be simultaneously assigned pursuit missions and missions of taking physical objectives. However, battalion-size units normally execute one type of mission at a time.

141. Conduct of the Pursuit

a. Contact with the enemy must be gained and maintained. The employment of Army Air vehicles provides observation of the enemy's movements and early warning of substantial buildups.

b. Pursuit is accomplished by the use of two distinct forces: direct pressure force and encircling force. A *direct-pressure force* exerts heavy pressure on the enemy. This force drives in or envelops the enemy's covering forces or rear guards, forcing the enemy's main body to halt and deploy to defend itself. The direct-pressure force contains the enemy until an attack by the *encircling force* accomplishes the pursuit mission (fig. 64). At battalion level

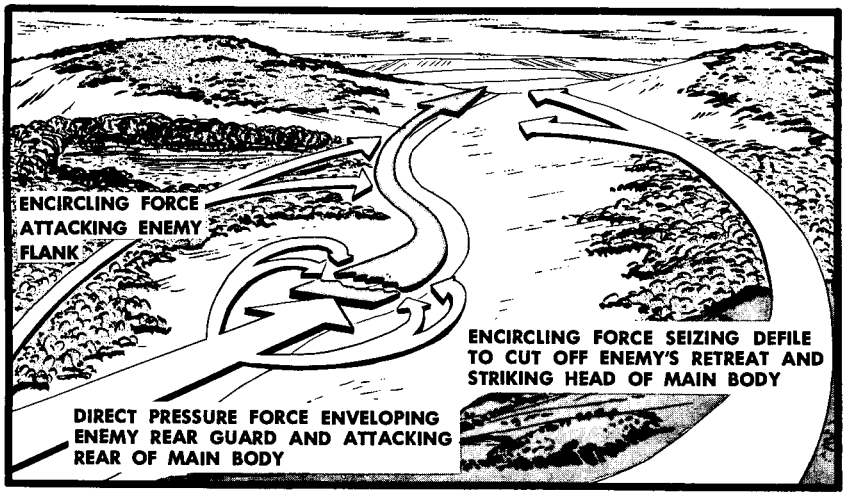

Figure 64. Actions of the direct pressure force and encircling force in pursuit.

there is a little difference between pursuit and other phases of exploitation; at platoon level, there is almost none.

c. The mission of the encircling force is to get in the rear of the enemy, block his retreat, then attack to destroy him in conjunction with an attack by the direct-pressure force. When terrain and tactical conditions permit, the encircling force advances along routes parallel to the enemy's route of withdrawal to reach critical points—defiles, bridges, etc.,—before the arrival of the enemy's main body. However, when the enemy cannot be out distanced, the encircling force may strike the enemy's flank.

Section V. ADDITIONAL CONSIDERATIONS IN THE OFFENSE

142. General

See FM 17–1, for a discussion of considerations peculiar to:

a. Night attacks.

b. Employment of the tank-mounted searchlight in battlefield illumination.

c. Attack of a fortified area.

d. Attack of a built-up area.

e. Attack of a defile.

f. Attack in woods.

g. Attack of a river line.

h. Minefield breaching.

CHAPTER 8
DEFENSIVE OPERATIONS

Section I. GENERAL

143. General

a. There are two basic types of defense: *mobile defense* and *area defense.* There are various combinations of the two basic types (FM 17–1).

b. The commander organizes and conducts the defense through application of the following basic considerations, which are discussed in FM 17–1:

(1) Proper use of terrain.

(2) Security.

(3) Mutual support.

(4) Defense in depth.

(5) All-round defense.

(6) Flexibility.

(7) Dispersion

(8) Maximum use of offensive action.

(9) Integration and coordination of defensive measures, including:

(*a*) Fire planning.

(*b*) Barrier planning.

144. The Tank Battalion in the Mobile Defense

The tank battalion will normally be part of a larger unit that is conducting the mobile defense. It may be part of the fixing forces in the forward defense area, form part of the striking force, or, on occasion, act as the covering force when suitably reinforced.

145. The Tank Battalion in the Area Defense

In this type of defense, the tank battalion can best be employed as a reserve for a higher command. The tank battalion normally should not be assigned a sector to defend. It may be used to reinforce the brigades in the forward defense area.

Section II. BASIC CONSIDERATIONS FOR THE ORGANIZATION OF THE DEFENSE

146. Organization of the Ground for Defense

Measures for increasing the effects of fire and maneuver take precedence over all other work in the defense. The ground is organized to assist in bringing accurate fire on the enemy while avoiding his fires, and to impede enemy movement while facilitating that of friendly elements. Camouflage is used at every opportunity, with emphasis given to concealment from the air. Every effort is made to take advantage of natural cover and concealment. Normal priority of work is:

a. Clearing of fields of fire and preparation of counterattack routes.

b. Preparation of defensive positions.

c. Strengthening of the defensive position.

d. Preparation of routes for supply and evacuation.

e. Establishment of a communication system, with emphasis on warning of enemy approach.

147. Clearing of Fields of Fire and Preparation of Counterattack Routes

The clearing of fields of fire and preparation of counterattack routes, being of utmost importance, receives first priority. Weapons are located in positions that maximize their capability to place effective fire on the enemy; sectors of fire are cleared. A reconnaissance is conducted based on tentative counterattack plans to determine the requirements for the preparation of routes to permit the rapid movement of counterattacking forces.

148. Preparation of Defensive Positions

a. The battalion commander assigns defensive positions or sectors to his companies or company teams. When positions are assigned, the battalion commander may also designate such supplementary positions as necessary for the execution of the battalion task force scheme of defense. Each company commander then reconnoiters his assigned position or sector and, on the basis of that reconnaissance and all available additional information, locates his platoons to cover avenues of approach into his position or sector. Successive reconnaissance by lower unit commanders results in fixing the exact distribution of the smallest units and their weapons (fig. 65).

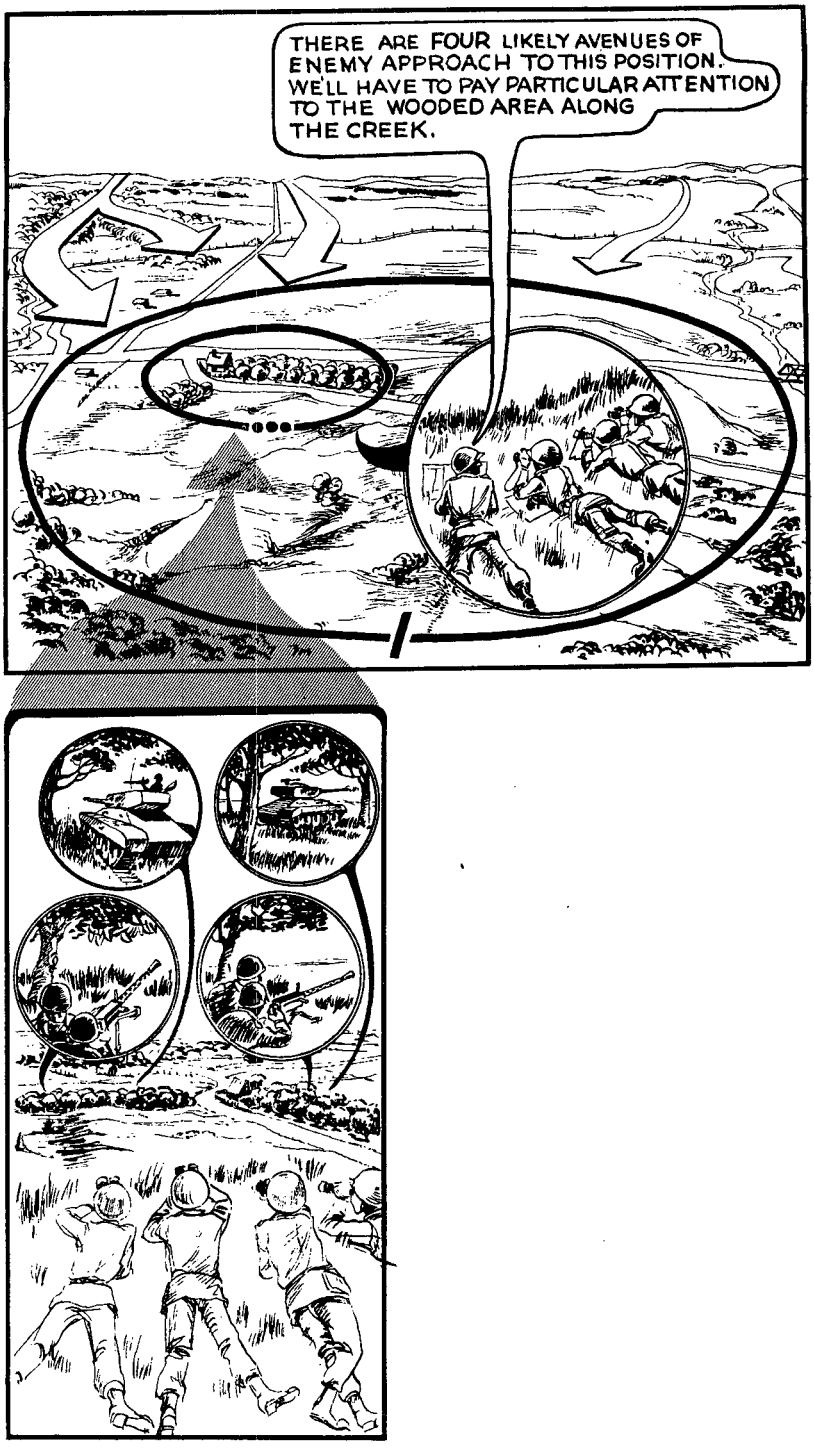

Figure 65. Commanders conduct reconnaissance, select positions, and plan the organization of the position.

b. Each unit improves its defenses as soon as the position is occupied. It clears fields of fire where necessary. Tanks and crew-served weapons prepare primary, alternate, and supplementary positions. Obstacles are constructed with priority to those across logical avenues of enemy approach (fig. 66).

c. Each tank position should possess good observation, fields of fire, concealment, and cover, and should be easily accessible. These positions should have natural protection from enemy fire including nuclear fires (FM 17–1). Positions should not be selected close to landmarks or such objects as lone trees or chimneys, on which the enemy artillery is likely to place fire. Routes between positions are selected, marked, and, if necessary, improved.

d. Range cards are prepared for appropriate weapons at all positions. When time permits, tank commanders and gunners reconnoiter the terrain within range of their weapons, actually measuring ranges to selected reference points along probable routes of enemy advance. This tends to insure that effective fire can be delivered in smoke, darkness, and fog. Artificial obstacles should be sited to protect the positions and to force the advancing enemy under the flanking fire of the defender's tank guns. (For further discussion, see FM's 17–12 and 31–10).

e. Infantry, erecting any necessary camouflage to conceal their activity, dig in, siting their weapons along principal directions of fire, but are prepared to fight in any direction.

f. Command posts, mortars, Davy Crockett weapons and combat support units are normally incorporated within the defensive positions for protection. They should be located in concealed, defiladed positions.

g. The armored personnel carriers provide mobility, increased means of radio communication, and tactical supply and evacuation. Their vehicular machineguns provide additional firepower for the defense. The armored personnel carriers are integrated into the all-round defense of the position.

h. For additional detail and discussion related to strengthening the posiiton, use of chemicals, preparation of routes for supply and evacuation, command and control, and fire planning, see FM 17–1.

149. Defense by a Tank Battalion in a Perimeter

a. In the conduct of offensive, defensive, or retrograde operations, it may become necessary for a tank battalion task force to establish a perimeter to defend itself. The task force commander analyzes the factors of METT (mission, enemy, terrain and

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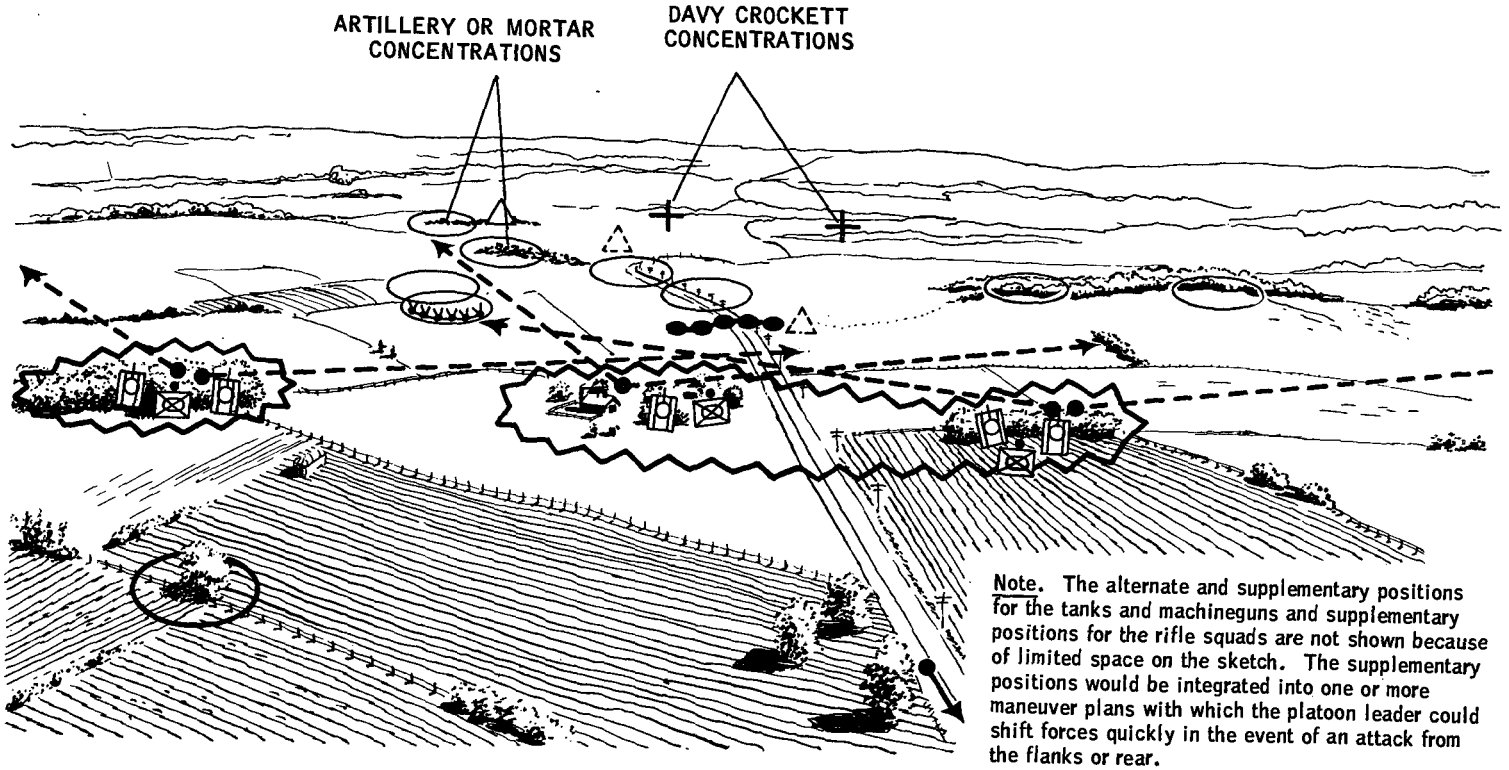

Note. The alternate and supplementary positions for the tanks and machineguns and supplementary positions for the rifle squads are not shown because of limited space on the sketch. The supplementary positions would be integrated into one or more maneuver plans with which the platoon leader could shift forces quickly in the event of an attack from the flanks or rear.

Figure 66. Organization of the position.

weather, and troops available). He then assigns sectors to his company teams. He should maintain a reserve so located that it can move quickly to any part of the defensive system.

b. The company teams assigned defensive sectors organize dominating and key terrain. They establish their positions far enough from the center of the defensive area to give the reserve adequate room for maneuver. Freedom of maneuver for the reserve is essential. The task force commander should be prepared to give up some ground to seek more favorable terrain in the event the enemy attacks in strength.

c. Company teams assigned defensive sectors normally must defend extended frontages. As a result, they must organize their positions to insure complete domination of likely avenues of approach into their sectors. Each company assigned a sector of the perimeter defense establishes a security force. These forces are disposed on the exterior of the perimeter to prevent surprise attack by providing early warning of enemy approach. The distance at which the security force operates in front of the strong points will depend upon the enemy and terrain. The battalion armored cavalry platoon may operate forward of company security forces providing observation over routes leading to the perimeter, be integrated into the security echelon designated by task force commander, or it may be attached to a company occupying the perimeter. If used in a security role, the platoon may be made a part of the reserve upon withdrawal into the perimeter.

d. The task force commander, in determining how much of his force to employ in the establishment of the position and how much to keep out as his reserve, will consider the enemy situation, the terrain and weather, the strength and condition of the companies, and the mission of the task force. Normally, the reserve will be tank-heavy, and the bulk of the infantry will be placed in the strongpoints on the perimeter.

e. The headquarters elements of the battalion will occupy the least vulnerable position within the defensive position.

f. Plan of fire support will include all available fire support. The tank battalion task force on an independent mission may have artillery attached. The artillery is located so as to support the perimeter.

g. Company short range radar and battalion medium range radar will be positioned to cover avenues of approach in accordance with the battalion surveillance plan developed by the battalion S2.

h. The forces on the perimeter make every effort to stop an enemy attack. If the perimeter is penetrated or is on the verge of being penetrated, the reserve may be committed to attack the enemy force. If the counterattack is successful and the enemy threat is wiped out, the perimeter may be maintained as originally established. If the counterattack is not successful, it may be necessary for the task force commander to order that sector of the perimeter under attack to withdraw to previously prepared supplementary positions to regain freedom of maneuver for both the forces under attack and the reserve.

Section III. MOBILE DEFENSE

150. General

a. Elements of the mobile defense consist of security forces, fixing forces, and the striking force (FM 17–30).

b. The success of the mobile defense depends upon timely and accurate information of the enemy, and the ability of forces within the defense area to move rapidly. Aggressive reconnaissance is conducted to determine the strength, composition, direction, and time of the enemy attack, and all information pertinent to the area of operation. Security is of vital importance in the mobile defense; units must not be surprised or prematurely engaged. All commanders must take positive action to insure that communication is maintained and that their units are prepared at all times to move rapidly to support the scheme of defense.

151. Tank Battalion Task Force as a Security Force

When a division is conducting a mobile defense, the division's armored cavalry squadron normally is assigned the security force mission. If the situation requires, however, a tank battalion task force or brigade may be assigned this mission. When so employed, the battalion will normally be assigned a covering force mission forward of FEBA. To accomplish such a mission, the tank battalion must be reinforced with mechanized infantry and engineers, and be supported by artillery and Army aviation. The battalion task force organizes company teams to operate across the extended front required by this type mission. Once organized for combat, the battalion task force conducts a security force operation as discussed in FM's 17–1 and 17–36.

152. Actions by Battalion Task Force as a Covering Force

The covering force initiates aggressive reconnaissance to make and maintain contact with the enemy. It provides early warning

of enemy approach, develops the situation as the enemy advances toward the defended area, and seeks to force the enemy to mass. As the enemy increases his strength, the covering force conducts a delaying action, disorganizing the enemy and attempting to deceive him as to the location of the main force. (For details concerning delaying actions, see ch. 9.)

153. Actions by Company Team as Part of a Covering Force

The company team commander develops his plan to accomplish support of his part of the battalion task force mission. This includes selection of positions, task organization, and reconnaissance of routes to successive delay positions. The company team commander studies the terrain to determine his scheme of maneuver. (For details concerning delaying actions, see ch. 9.)

154. Tank Battalion Task Force as Part of A Fixing Force, General

The battalion task force commander bases his plan of defense upon the employment of his troops to canalize the enemy and force him to mass on ground suitable for destruction by striking forces of higher headquarters. This may be accomplished by offensive or defensive action, or a combination of both. The alternate plans must consider the possible use of the battalion task force to attack in another sector. The plan of defense should also consider the plan employed by the battalion task force commander to deny key terrain within his defensive area. The battalion task force commander may elect initially to accomplish his mission using the techniques of mobile defense, which contemplates a series of limited-objective counterattacks to disrupt the enemy's attacks. However, the terrain along the FEBA may restrict his mobility and may require him to employ techniques of area defense by defending certain key terrain. In addition, he selects blocking positions in depth on key terrain, which will permit him to move his company teams to supplementary positions from which fire can be delivered into the flanks of a penetration, from which a penetration can be slowed or stopped or from which a counterattack can be launched.

155. Organization of the Battalion Task Force Sector as Part of Fixing Force

a. The plan of defense is based upon the plans developed by higher headquarters. After studying the terrain and reconnoitering the area, the battalion task force commander develops his plan of defense (fig. 67). It includes plans to deny key areas within

his battalion task force sector. These plans include counterattacks by the battalion task force, company team counterattacks, and the selection of blocking positions critical to his plan of defense. Based on the battalion task force counterattack plans, the size and number of blocking positions, and the terrain, the commander determines the tactical disposition, location of blocking positions and sectors, and the composition of company teams.

b. The battalion task force commander indicates to his company team commanders the general trace along the forward edge of the battle area (FEBA) to be organized by the company teams,

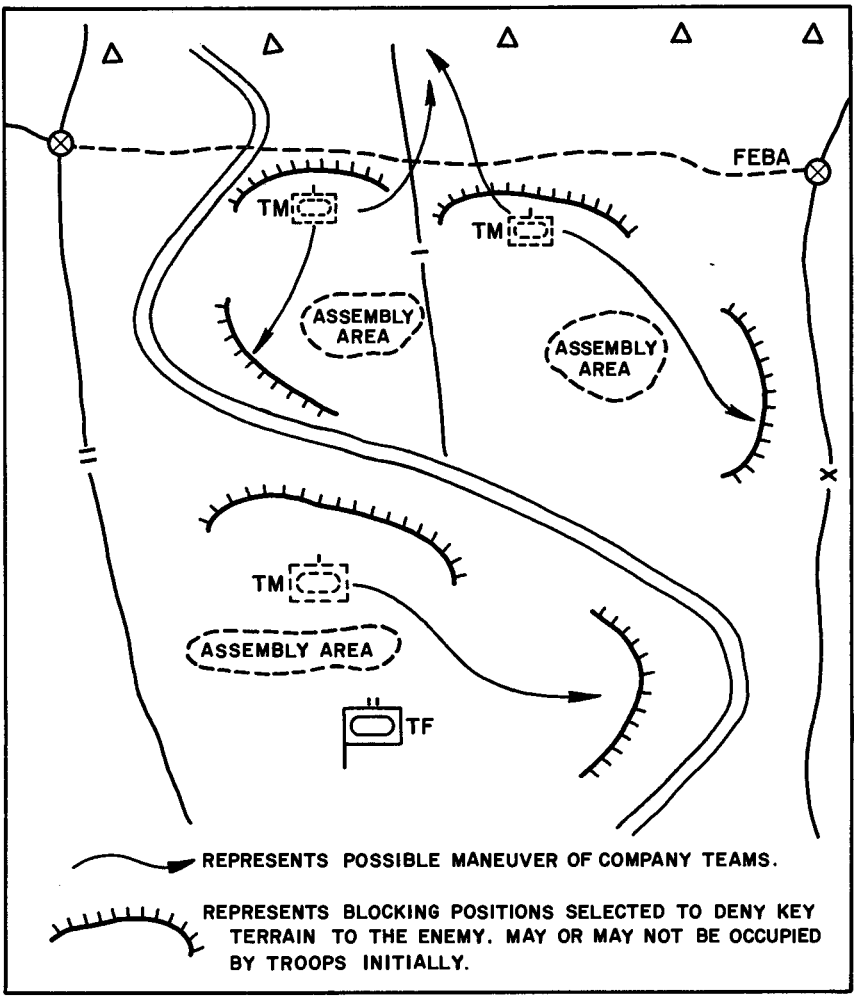

Figure 67. Example of a battalion task force organization of defensive sector.

and designates company sectors within which blocking positions may be designated to be occupied initially or on order.

c. If the width of the sector and the terrain permit, the battalion task force commander selects a disposition that will provide depth to his defensive sector. This is accomplished by placing one or more company teams in depth.

d. The battalion task force commander, in organizing his task force for combat, normally assigns tank-heavy teams in sectors favorable to hostile armor approach, and mechanized infantry-heavy teams in sectors to cover likely avenues of dismounted enemy approach. Terrain within the task force sector may favor balanced teams. The battalion mortar and Davy Crockett platoon is employed in general support to provide fire support across the front of the battalion task force sector and at maximum range in front of the FEBA.

e. The battalion task force commander next considers the security of his task force during the organization and preparation for the defense. The armored cavalry platoon and/or companies in the forward defense area establish observation posts to the front of the forward defensive positions. Communication is established between the observation posts and the forward company teams. If required, patrols and observation posts may be established to the flanks to insure security for the battalion formation.

f. Ground surveillance radars are sited along probable avenues of enemy approach.

g. To preserve security during the organization of, and preparation for, the defense, and to insure that the battalion task force does not present a nuclear target, the task force commander may assign company team assembly areas for the initial movement of his teams into the forward defensive area. The assembly areas are normally well forward in the company team sectors, and are located where ground masses provide maximum protection from nuclear weapons. The assembly areas are used as bases from which the company teams organize and prepare assigned blocking positions and their initial defensive positions. The assembly areas should provide maximum cover and concealment and permit rapid movement to assigned positions.

h. Counterattack plans are developed concurrently with the organization of blocking positions and initial defensive dispositions. Battalion task force counterattack plans are made for battalion-size attacks forward of the FEBA, counterattacks outside the battalion sector in support of the striking force, and com-

pany team counterattacks to accomplish the battalion task force commander's plan of defense of denying key terrain within the battalion task force defensive sector. Control measures outlined in paragraph 159*b* are designated for each counterattack plan.

i. Certain blocking positions may be used as supplementary positions from which the enemy can be engaged if penetrations or attacks from certain directions occur. The scheme of defense also includes the use of blocking positions from which units therein can support by fire, or conduct limited-objective attacks against enemy forces that threaten another position.

j. The battalion task force command post (less command group) is located to the rear, where it will receive protection by the tactical disposition of the company teams. Elements of the division artillery may be located within the battalion task force area. Liaison and communication will be established with such elements, and the location of the artillery units will be coordinated with the dispositions of the company teams. The battalion combat trains are located in the general area of the battalion task force command post; all vehicles not essential to the immediate defense are organized into field trains and located with the brigade trains.

k. The battalion task force may be assigned a position in depth within the fixing force or may be designated as a brigade reserve. In such a case, the battalion task force may be assigned any one or a combination of the following tasks to support the fixing force commander's plan of defense.

(1) Act as a counterattack force for the fixing force.

(2) Cover the withdrawal of forward troops.

(3) Move to supplementary positions to support counterattacks.

(4) Deny key terrain within the forward defensive area.

(5) Be prepared to join the division striking force in the conduct of a counterattack.

156. Organization of the Company Team Sector as Part of Fixing Force

a. When the company team commander receives the battalion task force order for defense, he coordinates the team's movement into the initial assembly area. As soon as possible, he initiates a reconnaissance of his area to develop his plan for the defense (fig. 68).

b. The company team commander develops his plan to support the battalion task force scheme of defense. This includes selection

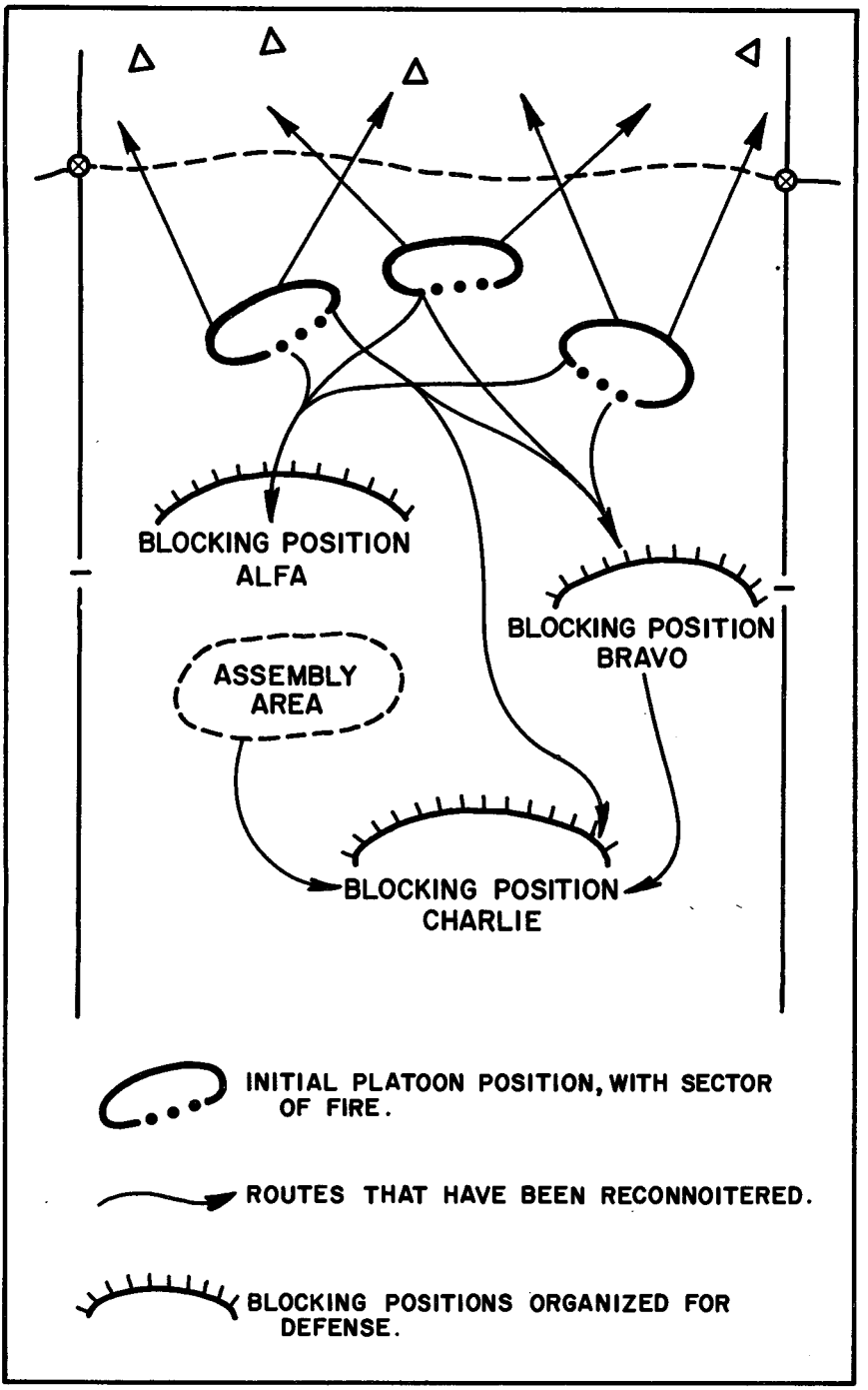

Figure 68. Example of company team organization of defensive sector.

of routes, lines of departure, task organization, and initial formations for each counterattack plan and the organization of each blocking position as required. In addition, the company team commander studies the terrain to determine his plan of defense of his initial position. This may include limited counterattack, occupation of defensive positions to defend the FEBA, and delaying back to blocking position selected by the battalion task force commander. Each route is reconnoitered by key commanders, and movement are rehearsed if time permits.

c. Positions for platoons are selected in each defensive position to provide long-range fires and be mutually supporting. Tanks are located to provide long-range fires; mechanized infantry dismounted are located to provide protection for the tanks and to cover likely avenues of dismounted enemy approach. Sentinels are located to the front and flanks to provide local security. Routes to supplementary positions are reconnoitered, and the task organization for the occupation of each blocking position in the sector is determined.

d. The plan of fire support is developed. Range cards are made for tanks and appropriate weapons for other positions. Overlays are made and submitted to the battalion task force commander, showing the organization and planned fires for the initial position and for each blocking position within the company team sector.

e. Blocking positions normally are selected on key terrain. The company team commander may not occupy the position(s) until the enemy has advanced to a point where a nuclear weapon placed upon the blocking position would also endanger the attacking force. The bulk of the company team may be located in a company team assembly area or other covered position that permits rapid movement into the blocking positions.

f. Terrain will normally be the primary factor that influences the method of employing platoons of a tank company team within a company sector. A team commander may be able to organize his entire team on one terrain feature, or he may be forced to assign platoons to separate terrain features. Thus, a company team could have three separate platoon positions within the team position. Further, it may have 1 platoon occupying 1 terrain feature while the remainder of the team occupies another terrain feature. In some instances, due to the nature of the terrain and width of sector, platoon positions may be out of immediate fire support range of other elements of the company team. Mutual support by movement between platoon position, is essential; mutual support by fire is desirable. To be considered as mutually supporting by

fire, each platoon must be able to give some assistance by fire to an adjacent platoon under attack.

g. Based on the plan of defense, the company team may be required to prepare one or more supplementary blocking positions to which it can move against enemy forces which threaten another unit of the battalion. These blocking positions must provide for mutual support by movement to the assistance of the theatered unit, supporting it by fire, reinforcing it, or counterattacking the enemy force.

157. Conduct of Battalion Task Force, Fixing Force Mission

a. As early as possible, depending upon the development of the situation by the covering force and actions of the enemy attacking force, the brigade commander will indicate to the battalion task force commander the primary plan of defense to be conducted by the brigade. This plan may be any or a combination of the following:

(1) Spoiling attack to the front to destroy the advancing elements of the attacking enemy.

(2) Stop and fix the enemy in front of the FEBA for a counterattack by division striking force.

(3) Have 1 battalion task force stop and fix the enemy in front of the FEBA for a counterattack by 1 or more battalion task forces of the brigade.

b. If the scheme of defense is a counterattack by the brigade, the brigade commander will indicate the counterattack plan to be executed or develop a counterattack plan based upon the enemy's action. The battalion task force commander insures that his companies remain highly mobile and are prepared to execute the counterattack.

c. If the scheme of defense is to stop and fix the enemy in front of the FEBA, the task force commander initiates his scheme of defense to accomplish this mission. One or more company teams may be ordered to defend key terrain while others conduct a limited-objective attack.

d. The observation posts adjust long range supporting fires on the enemy to slow or stop his attack. Army air vehicles are used to locate enemy reserves behind the initial attacking formation and to seek targets of opportunity for artillery and nuclear weapons. When forced by enemy action, individual observation posts withdraw through the FEBA to assume new missions.

e. As the enemy attacking force comes within effective range of

the defending forces, supporting fires are delivered against the enemy to inflict maximum casualties. As contact is gained, the battalion task force commander initiates actions to stop, destroy, repel, and disorganize the enemy and to divert him toward a preselected area. The enemy is kept under relentless pressure and is given no opportunity to establish himself in the battalion task force area. Every effort is made to disorganize the enemy attack formation, to separate elements of his attacking force, and to upset his plan of attack.

f. When an enemy main attack is directed against the battalion task force sector, the commander seeks to retain his mobility to shift his firepower to the critical area. If certain blocking positions are in danger of being overrun, he may order forces on these positions to occupy supplementary positions. Company teams may be ordered to support blocking positions that are under heavy attack. This may be accomplished by a limited-objective counterattack, supporting fire, or actual reinforcement of the forces on the positions.

g. As the attack increases in strength and the initial company team positions are in danger of being defeated, the battalion task force commander may be forced to conduct a delaying action, using the supplementary position selected in depth.

158. Company Team, Conduct of the Fixing Force

a. Within their area of responsibility, the company teams may resist the advance of the enemy by counterattack, defense of key terrain, or delay of the enemy.

b. Depending upon the advance of the enemy, particularly when contact becomes imminent, the company team commander insures that his team is highly mobile and is prepared to execute immediately the announced plan of defense.

c. If the plan of defense requires a counterattack, it is conducted in the same manner as an attack. The necessary coordination is effected; the attack formation is announced, and the company team executes the plan as ordered (ch. 7).

d. If the plan of defense requires the occupation of one or more blocking positions, the company team commander executes this plan by moving his forces to previously prepared positions within his sector.

e. Before the passage of the covering force through the company team's forward position, liaison is normally established by the covering force. The company team commander assists in expediting the passage of the covering force.

f. When enemy action forces the observation posts in front of the company team sector through his front lines, the company team commander orders his units to open fire at the maximum effective range of weapons, and calls for supporting fires upon the enemy. Every effort is made to stop and disrupt the enemy's attack.

g. As the enemy attack develops, the company team commander must be prepared to move to supplementary positions, conduct limited-objective counterattacks to relieve pressure on other blocking positions, or move to a position from which the company team can fire.

h. Situations will exist when it is necessary to hold key terrain, and when there is a requirement for the company team to conduct a defense of a blocking position. In this situation, the company team conducts the defense as described for the area defense. Maximum effort is made to stop and disrupt the enemy attack before the enemy can assault the position. If the enemy succeeds in advancing to a position where he can assault, the commander calls for final protective fires in front of his position. The authority to call for final protective fires is normally delegated to platoon leaders of platoons on the FEBA.

i. If the battalion task force is receiving the main enemy attack, and terrain is not key to the defense, the company team commander may be ordered to conduct a delaying action in his sector. He uses the blocking positions and other terrain features as delaying positions from which he can inflict casualties upon the enemy.

159. Tank Battalion Task Force, Striking Force

a. General. When the armored or mechanized division is conducting the mobile defense, a tank battalion task force given a striking force mission will normally be employed as part of a brigade.

b. Plans.

(1) When a tank battalion task force is employed in the striking force, the task force commander prepares counterattack plans for the employment of his force based on orders of the brigade commander who outlines his concept and prepares the overall counterattack plans for the brigade. The battalion task force plans include control measures, supporting fires, and necessary coordination. Control measures include but are not limited to:

(*a*) Lines of departure.

(*b*) Direction of movement denoted by axis of advance (arrow) or direction of attack (arrow) dependent upon the degree of control required.

(*c*) Objective(s). Additional control measures, if required, may include attack positions and routes thereto, and boundaries.

(2) Final approval of the striking force counterattack plans must be given by the commander conducting the mobile defense. After plans have been approved, key members of the battalion task force should be made familiar with the plans and given an opportunity to reconnoiter the attack area. Enemy action will seldom permit the striking force to execute its attack exactly as planned. The tank battalion task force commander must be prepared to modify quickly any attack plan to insure success, regardless of what course of action the enemy follows.

c. Reconnaissance. Formulation of the attack plans should be preceded by a thorough reconnaissance of the attack areas designated by the commander conducting the mobile defense. The attack by the striking force should take place over terrain favoring the attacker. It should strike the enemy from the flanks or rear and pin him against an obstacle.

d. Initial Locations of the Striking Force. A tank battalion task force employed with the striking force usually is positioned to add depth to the forward defensive area. The task force commander, as a matter of second priority to the completion of the counterattack plans, organizes a position on key terrain within his assigned area. However, no action is taken that would interfere with the rapid movement of the task force in implementation of any of its counterattack plans. The initial location of the striking force will be determined by the next higher commander. Its location should use the best routes to any threatened point.

e. Decision to Commit the Striking Force. The decision to commit the striking force is based to a large extent on the information furnished by the forward elements. When committed, the striking force attacks swiftly, and in mass, over previously reconnoitered routes, to hit the enemy with the maximum surprise, firepower, and shock action.

f. Conduct of the Counterattack. When the striking force is committed, the striking force commander assumes command of the area between his line of departure and his objective. After passage by the striking force, the mission of the fixing force may continue to be blocking, delaying or canalizing the enemy. The

striking force is given priority of supporting fires and close air support during its counterattack.

160. Conduct of the Battalion Task Force, Striking Force

a. At the decisive time and place, the striking force is employed in a counterattack role to destroy the enemy. If possible, the counterattack is launched before the enemy attack gains, momentum. Once the enemy has been canalized into a preselected area and orders have been issued committing the striking force, all available fires are brought to bear on the enemy. A nuclear strike may be used initially to destroy the enemy forces. Close air support is used to attack enemy concentrations and to prevent his reinforcement.

b. Frequently it may not be possible to canalize the enemy into the preselected areas, but the action, as it develops, may create areas that facilitate destruction of the enemy.

c. Upon completion of a successful counterattack, the battalion task force may return to a prearranged location or assume another mission.

d. In the event of a major penetration of the forward defensive area, the battalion task force must be prepared to assume the mission of fixing forces while other elements of the division conduct a counterattack. The battalion task force must also be prepared to conduct a delaying action if the strength of the enemy attack makes such action necessary.

e. For details concerning the attack, see chapter 7.

161. Conduct of Tank Company as Part of the Striking Force

The company team commander must formulate his plans to support the battalion task force missions. Actual rehearsals are conducted when time permits. As a minimum requirement, key members of the team should make a map and ground reconnaissance of routes, attack positions when used, lines of departure, blocking position, and objectives. (For details concerning the attack, see ch. 7.)

Section IV. AREA DEFENSE

162. Missions of the Tank Battalion in Area Defense

a. The area defense should exploit to the maximum the capabilities of the tank battalion. In this type of defense, the tank battalion must be assigned missions where it can use its mobility and

shock action to the greatest possible extent under the existing conditions. These missions will include:

(1) Acting as the reserve for a larger force.

(2) Forming a general outpost for a larger force.

b. In area defense, the tank battalion is best employed as the reserve. On occasions the battalion may be employed as part of the forces in the forward defensive area. When such instances occur, the battalion should be heavily reinforced with infantry.

c. Additional details of the area defense are contained in FM 17–1.

163. Security Forces, General

Security echelons consist of a general outpost and combat outpost. The general outpost is established by the division commander. Combat outposts and local security are established by elements holding the forward edge of the battle area.

164. The Tank Battalion on A General Outpost Mission

The general outpost is normally organized and controlled by the division or higher commander. The mission of the general outpost is to obtain timely information of the location, strength, and activities of the enemy, to disorganize and delay his advance, and to deceive him as to the true location of the battle area.

a. Though an armored cavalry squadron is suited better for such a role, the tank battalion, reinforced with mechanized infantry or infantry and supported by engineers, artillery, and Army aviation, may be employed to form all or part of the general outpost for the division. The exact location of the general outpost is normally prescribed by the division commander.

b. When given a general outpost mission, the tank battalion commander makes a personal reconnaissance of the position, supplemented by a map and aerial photo study. Based on the mission and reconnaissance, he makes his plans, including security measures, disposition and frontages of troops on the position and on advantageous delaying positions in the rear, organization and coordination of fires, organization of the ground, means for deception and disorganization of the enemy throughout the action, and movement to successive positions in the rear. Extended frontages are covered by increasing the intervals between units; these intervals are covered by observation and fire.

c. Battalion actions during conduct of a general outpost mission are essentially the same as for a covering force mission. Un-

less the outpost is required to hold for a definite time, it begins its withdrawal to subsequent positions as soon as it is apparent that a superior enemy force is deployed for action and outposts are likely to become decisively engaged. The action upon each successive delaying position is designed to create as great a change as possible in the direction of the enemy attack, and to bring about the deployment of the maximum number of hostile units.

165. The Combat Outpost

The combat outpost is normally located on the first high ground in front of the forward edge of the battle area. It is normally far enough forward to deny the enemy close ground observation of the battle area. The elements of the combat outpost are usually furnished by the forward forces occupying the FEBA. If a tank battalion task force is given a sector along the FEBA to defend, a company team or the battalion armored cavalry platoon may be used as its combat outpost. The platoon may be reinforced if necessary. Artillery and other supporting fires usually are furnished to the combat outpost from firing positions in the battle area.

a. The combat outpost, within its capabilities, performs the same missions as the general outpost.

b. The combat outpost maintains contact with security forces to the front and flanks, and with the forces in the battle area. Routes are reconnoitered and coordination effected for the rearward movement of the combat outpost through the forward defense area.

c. The combat outpost maintains contact with, and assists in covering the withdrawal of, the general outpost. It seeks early contact with the enemy to bring supporting fires upon his forces as they advance. The combat outpost withdraws on order of the commander controlling its actions; normally, it is withdrawn before it becomes involved in close combat with the enemy. The withdrawal is made by previously selected routes that do not interfere with fires from the battle area.

166. Organization and Functions of Battalion Task Force Forward Defense Area

The brigade or division commander confronted with an armor avenue of approach into his sector, may direct a tank battalion task force to defend a position in depth on the FEBA to maximize the use of the battalion antitank capability. The battalion commander makes a reconnaissance of the terrain and assigns

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company-size defensive areas along the FEBA. Boundaries are designated between company teams in the forward area. The defensive areas should be mutually supporting by fire if the terrain and the width of sector permit. The battalion commander designates those supplementary positions that he deems essential for the accomplishment of his mission. A plan for organization of the ground, a plan of fire support, and a plan for surveillance are made. Communication is established between the combat outpost and the task force command post. Routes are reconnoitered, and coordination is effected for the rearward movement of the combat outpost through the FEBA.

167. Conduct of Battalion Task Force as Part of the Forces in Forward Defense Area

a. The success of the area defense depends upon the solidity of the defense, maximum application of firepower in front of the FEBA, and timely execution of counterattacks to destroy or eject enemy penetrations. The commander conducts the defense aggressively. The defense progressively disrupts and weakens the enemy. The situation may require that certain ground be held regardless of the cost or risk involved; therefore, no commander may evacuate his position without approval of his higher headquarters.

b. Forces in the defense area engage the enemy at maximum effective range. As the enemy continues to advance within range of other weapons, the volume of fire is increased. If the attack is not disrupted by the close defensive fires and the enemy prepares to assault the position, final protective fires are delivered. Commanders may reinforce these final protective fires with the fires of additional weapons.

c. During the day, the tanks normally remain concealed in the vicinity of their primary positions, moving into them when the enemy attacks. At night, if enemy combat patrols and tank hunters are active, it may be necessary to withdraw the tanks to special positions nearer or within the organized infantry areas.

d. The tank positions, including supplementary and alternate positions, should be located within occupied areas. In some cases it may be necessary to extend the occupied area to include suitable tank positions. One of the advantages of the tank as an antitank weapon in the defense is its ability to move under small-arms and artillery fire.

e. For maximum coordination, flexibility, and control in area defense, tanks are not attached to units below company level.

168. Organization and Functions of the Reserve, General

a. The reserve is constituted from forces not required to hold the battle area. The reserve is located on, or to protect, key terrain. It is positioned to block penetrations from the front and flanks. Counterattack plans are developed for possible penetrations by the enemy; counterattack plans are developed to strike the enemy in front of the FEBA or to the flanks. Objectives, routes, lines of departure, and directions of attack are selected for each counterattack plan. Key individuals should reconnoiter the terrain of each counterattack plan. The reserve also makes plans to reinforce front line units or to cover the withdrawal of front line units. The reserve should be heavy in tanks; however, the exact composition of the reserve is determined after a study of the factors of METT. Depending upon the frontage assigned and the terrain, each unit in the area defense, from the company team through the division, will retain a reserve if possible.

b. All available combat and combat support forces of the defenders may be used to participate in the counterattacks. Plans must be sufficiently flexible to permit the reserves of front line battalion task forces to participate in the counterattacks.

c. Forces in strongpoints of the battle area not heavily engaged may be moved to supplementary positions from which they can deliver fires upon the flanks of the penetration. These forces may conduct limited objective attacks to seal off the enemy force in the preparation.

169. Conduct of Battalion Task Force as Reserve

A battalion task force may be assigned a reserve mission as part of a brigade. The task force commander studies the terrain and selects company team positions that block likely avenues of enemy penetration. After consideration of the factors of METT, he determines the task organization for each team to occupy these positions. In locating and organizing his forces, he must consider the counterattack plans developed by higher headquarters. Plans are developed for rapid movement to execute these counterattack plans. Supplementary positions are selected to meet enemy threats from the flanks, and each is reconnoitered and organized.

170. Conduct of Tank Company as Part of the Reserve

A company team may be assigned as reserve for a battalion task force or brigade. When a team is given such a mission, the higher commander will designate formation, and constitute a

base from which the team may conduct limited counterattacks. The reserve position is organized for all-round defense. Normally the position will permit the team to support forces on the forward strongpoints by fire. Supplementary positions to the flanks are selected and organized. Plans are developed to carry out or support the counterattack plans of the task force, to reinforce forces on the strongpoints, and to block enemy penetrations.

171. Tank Platoon in Defensive Combat

a. Whenever possible, tanks avoid disclosing their positions and hold their fire until the enemy tanks are within effective range of the main tank gun. Although their primary target is hostile tanks, they may employ HE and machinegun fire against groups of enemy infantry, supporting weapons, or other targets of opportunity.

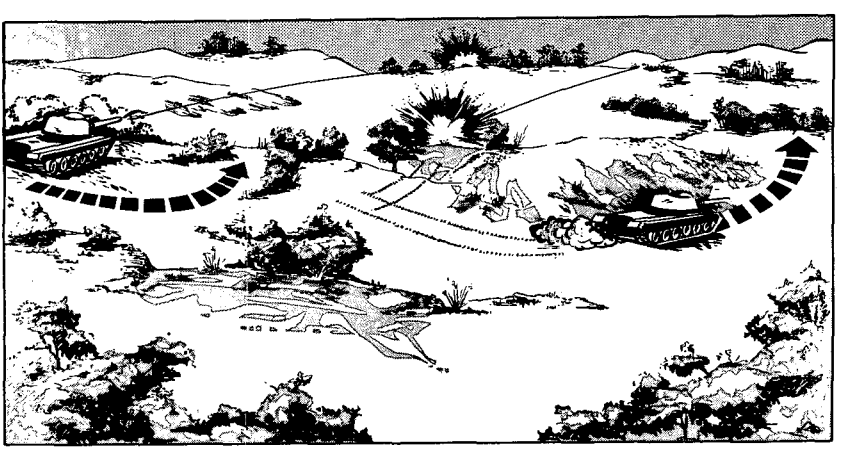

Figure 69. The platoon leader shifts individual tanks from position to position to avoid heavy antitank fire.

b. The tank platoon leader controls the fire and movement of his platoon.

c. The platoon leader shifts the individual tanks from position to position whenever necessary to obtain better fields of fire or to avoid heavy antitank fire (fig. 69). Once the direction of the hostile main effort is determined, the commander responsible for the defense of the position may direct the platoon leader to move most of his tanks to oppose it.

d. The tank platoon may be employed in conjunction with the mechanized infantry or infantry battalion reserve, for small-scale counterattacks. Such an action is especially appropriate in situations where the enemy force consists almost entirely of infantry or when the accompanying enemy tanks have been destroyed.

Section V. ADDITIONAL CONSIDERATIONS IN DEFENSE

172. General

See FM 17–1, for a discussion of considerations peculiar to:

a. Defense:

(1) Of a river line.
(2) Of a wooded area.
(3) Of a defile.
(4) Of a built-up area.
(5) At night and during periods of poor visibility.
(6) Against airborne attack.
(7) Against guerrilla action and infiltration.
(8) Against air attack.

b. Employment of the tank-mounted searchlight in battlefield illumination (app. VI).

CHAPTER 9
RETROGRADE OPERATIONS

Section I. BASIC CONSIDERATIONS

173. General

A retrograde operation is a planned movement of a command to the rear or away from the enemy. Tank units conduct retrograde operations when forced to do so by enemy action or voluntarily to obtain a tactical advantage. In the conduct of retrograde operations, tank units seize every opportunity to employ offensive actions in accomplishment of their mission, and they must be prepared to resume the offense when the situation becomes favorable for resumption of the attack.

174. Types of Retrograde Operations

There are three types of retrograde operations: retirement, withdrawal, and delaying action. (See FM's 17–1, and 61–100 for a detailed consideration of the types and purpose of retrograde operations.)

175. Tank Units in Retrograde Operations

Tank units normally will participate in retrograde operations as part of a larger force.

a. Retirement. The retirement begins after a unit has disengaged from the enemy and regained freedom of action; the operation consists primarily of a tactical road march (FM 17–1). (The material contained in the remainder of this chapter will be limited to the withdrawal and delaying action.)

b. Delaying Action. Tank units conduct delaying actions to delay the advance of an enemy force. Paragraphs 178–186 contain principles and techniques for the conduct of delaying actions.

c. Withdrawal. Tank units will conduct day and night withdrawals to regain freedom of action. Paragraphs 187–191 contain doctrine for the employment of tank units in withdrawals.

176. Combat Support in Retrograde Operations

a. Air Support. Maximum employment is made of Air Force tactical aircraft. In withdrawals, air strikes can be used to assist heavily engaged units in breaking contact; in delaying actions, the tactical aircraft are used to engage enemy forces at long range.

b. Artillery. Artillery is employed well forward to take the enemy under fire at extreme ranges and force his early deployment. Fires are planned to interdict enemy avenues of approach, deliver harassing fire, destroy enemy formations, and provide continuous fire support throughout the operation.

c. Engineer. Necessary engineer support normally will be placed in direct support of, or attached to, the tank battalion. Engineers prepare demolitions and create barriers within the battalion area of operations. Nuclear demolitions are integrated into the obstacle system as required (FM 17–1).

d. Army Aviation. Tank units will be provided Army aviation support from the brigade aviation platoon and aviation battalion as required. Army aerial vehicles are used for command and control, to extend ground reconnaissance and surveillance capabilities, and adjustment of long range artillery, mortar, and Davy Crockett fires.

e. Battalion Mortar and Davy Crockett Platoon (app. II).

177. Control Measures

a. Control measures used in retrograde operations include: phase lines, checkpoints, coordinating points, zones, routes, delay positions, and other measures associated with tactical marches. (See FM 17–1 for a detailed discussion of control measures.)

b. In selecting control measures, the commander should allow maximum freedom of action at the small unit level; however, missions and details of execution will be more detailed than in other operations.

Section II. DELAYING ACTION

178. General

a. A delaying action is an operation in which maximum delay and damage are inflicted on an advancing enemy without the delaying force becoming decisively engaged in combat. The tank battalion, because of its mobility and armor-protected firepower, is well suited for a delaying action mission. When such a mission is given, the battalion usually delays on successive positions.

Delay on successive positions consists of organized resistance on an initial position and the continuation of this resistance through successive delaying positions. (See FM 17–1, for a discussion of the fundamentals of delaying action.)

b. Delaying positions normally are not organized in great depth. They are strong in firepower, with the bulk of the force concentrated at likely avenues of enemy approach. A tank battalion conducting a delaying action is divided into two major echelons, the delaying force and a reserve. Companies normally do not designate reserves. The battalion commander influences the action by maneuver. The execution of a delaying action within assigned zones and between battalion delay positions is decentralized to company level. The battalion commander controls the action by assignment of company zones and designation of battalion alternate or successive delaying positions.

179. Reconnaissance and Selection of Delaying Positions

A reconnaissance to select delaying positions must be made as early as possible. Likely avenues of approach are located, and plans are made to deny their use to the enemy. In selecting delaying positions, the tank unit commander considers the same factors as those considered in selection of any defensive position. He selects positions affording long range fields of fire with routes suitable for withdrawal and lateral movement, and establishes priorities thereon. Additional delaying positions are selected between the delaying positions specified by higher headquarters.

180. Disposition of Forces for Delaying Action

a. The battalion commander assigns company zones corresponding to the most likely avenues of approach available to the enemy through the battalion zone (fig. 70). Boundaries are designated between companies to indicate zones of responsibility. Where possible, each avenue of approach and the terrain dominating the avenue are assigned to one unit. Each company zone should include at least one good route of withdrawal.

b. The battalion reserve is located initially in an area from which it can move rapidly and contain the enemy to any threatened point, or can execute a counterattack rapidly.

c. The battalion command post is located well to the rear, to avoid the necessity of frequent displacement and interference with the actions of the tactical elements of the battalion. The command group, however, should remain well forward with the engaged elements and should be among the last to withdraw. The

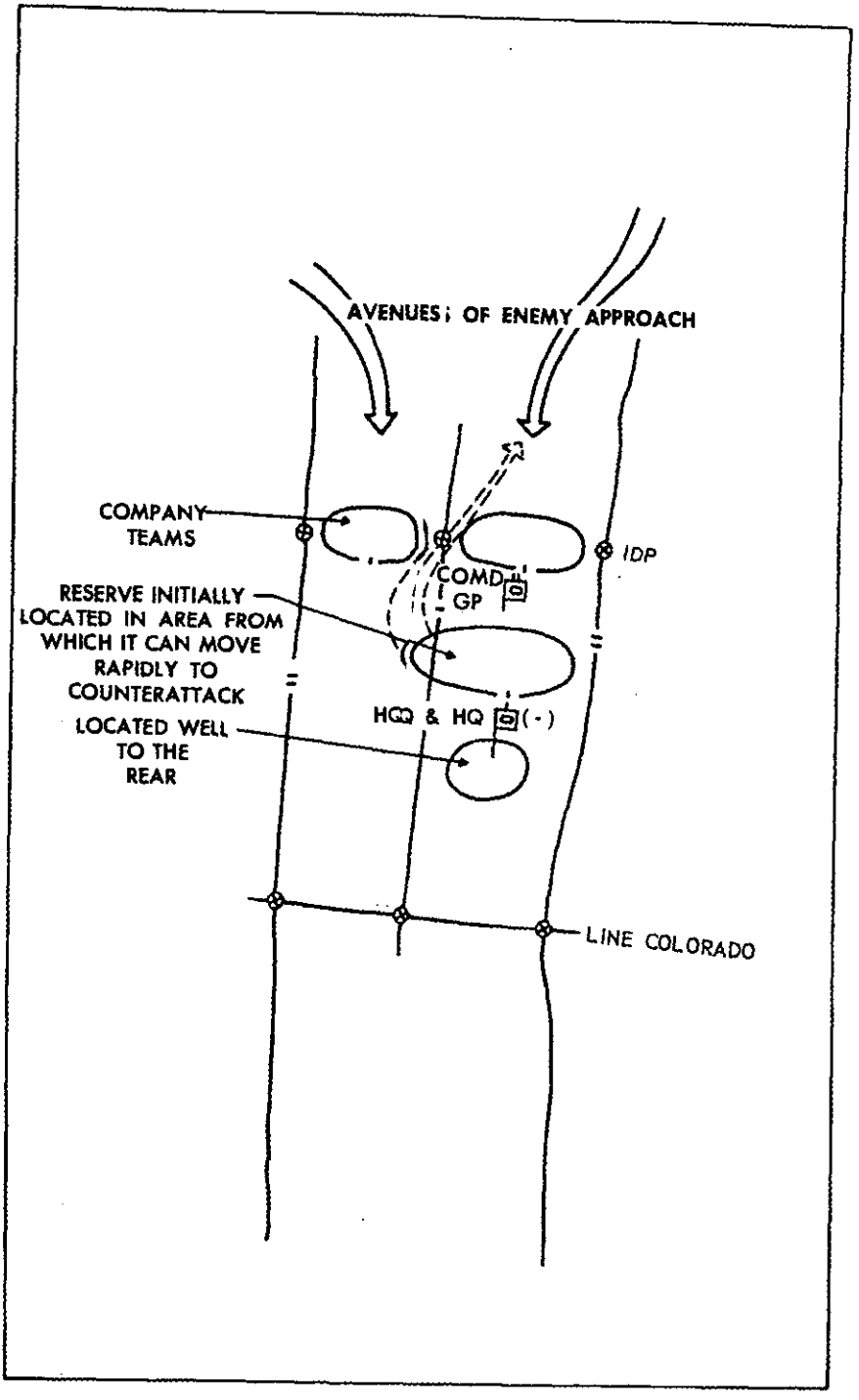

Figure 70. Tank battalion task force dispositions on a delaying position (schematic).

combat trains also are located well to the rear to avoid interference with combat elements.

d. In turn, the company commander disposes his platoons in such a manner as to cover likely avenues of enemy approach into his zone (fig. 71). In a wide company zone with several good avenues of approach, all platoons may be used on line. Whenever possible, however, at least one tank platoon should be positioned to provide some depth. This platoon differs from a reserve platoon in that its primary function is to deepen the position by reinforcing the defenses of the forward platoons. Attached mechanized infantry or infantry elements are placed where they can best protect and support the tanks and cover parts of the zone not covered by other fires.

181. Task Organization of A Tank Battalion Task Force Conducting Delaying Action

a. A tank battalion conducting a delaying action normally has mechanized infantry or infantry attached. The battalion task force so formed may be either tank-heavy or balanced. A typical tank battalion task force may consist of two organic tank companies and a company of mechanized infantry. In turn, the organization of company teams by the task force commander is based on a consideration of the factors of METT. A company team may consist of a company of tanks less 1 tank platoon with 1 or 2 mechanized rifle platoons attached. The task force reserve is normally tank-heavy but must have sufficient mechanized infantry to operate effectively anywhere in the task force zone.

b. The battalion armored cavalry platoon may be retained under task force control for the execution of such missions as flank guard or reconnaissance within the position or the rear. Sections, or the entire platoon, may be attached to company teams in the delaying force, to conduct observation or patrol missions or to assist in the reconnaissance of the next company delaying position to the rear.

c. The battalion mortar and Davy Crockett platoon normally is retained under task force control. Davy Crockett squads may be placed in direct support of, or attached to, company teams as required. In accomplishment of its mission, the platoon must be positioned to provide maximum support for forward company teams of the delaying force.

182. Security in Delaying Action

a. General. During a delaying action, the enemy will make

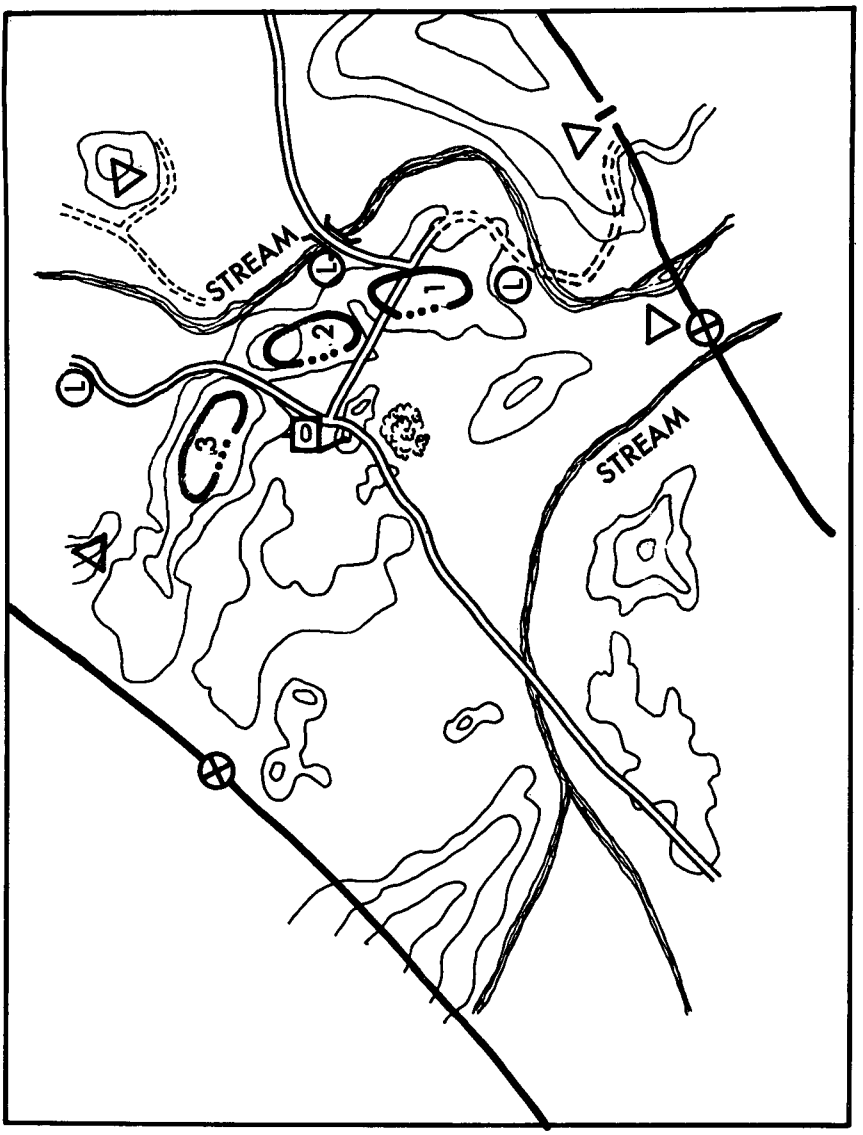

Figure 71. Company delaying position.

every effort to envelop and destroy the delaying force. The battalion task force commander must be particularly careful that the enemy does not turn his flank or surprise him in position. Continuous reconnaissance provides one of the best sources of security. Ground reconnaissance may be extended by ground radars and

Army Air vehicles. Close coordination between adjacent units is essential to avoid presenting an exposed flank to the enemy.

b. Security to the Front. If elements of the delaying force are not in contact with the enemy, action must be taken to prevent surprise of the delaying force and to provide early warning of enemy approach. The battalion armored cavalry platoon may be used as a security force forward of the company delaying positions. Observation posts are established to the front of delaying positions during daylight. These are replaced by listening posts at night. Routes from the position out to the observation posts are chosen very carefully to avoid detection by the enemy.

c. Security to the Flanks. A tank unit on the delaying position must establish its own flank security by all-round observation, patrols, and contact with adjacent units. Careful reconnaissance enables the delaying force to locate avenues of approach the enemy is likely to use in an effort to envelope the delaying force. Leading elements of any enemy force attempting to advance along such avenues can be blocked or ambushed. When not otherwise used, the armored cavalry platoon should be assigned the mission of protecting an exposed battalion flank.

d. Reference. For additional details and discussion of control measures, tactical support employment of fires, and use of obstacles in the delaying action, see FM 17–1.

183. Occupation of A Delaying Position

a. The occupation of a delaying position by a tank unit is generally the same as for any defensive position. However, the commander places greater emphasis on engaging the enemy at maximum effective range and on disposing his forces so that he can efficiently execute the planned withdrawal to the next delaying position.

b. Basic factors to be considered for the occupation of a delaying position by a tank unit include:

(1) Primary positions.
(2) Alternate positions.
(3) Supplementary positions.
(4) Observation.
(5) Long range fields of fire.
(6) Cover and concealment.
(7) Hull and turret defilade.
(8) Preparation of range cards.

(9) Security (includes observation posts, patrols, ground surveillance radar, and use of infantry to protect tanks).

(10) Coordination with other elements, including fire support.

c. Preparation of the position is continued as long as time permits. Alternate and supplementary tank positions are selected. Tank commanders familiarize themselves with the routes to these positions. Armored personnel carriers are placed in hull defilade and concealed; their cupola machineguns are integrated into the fire plan. Rocket launchers are sited in zones assigned to the infantry where enemy armor is most likely to appear.

d. Maximum use is made of crew-served weapons. The commander usually tries to position his tanks in hull defilade near the topographical crests of terrain features to obtain long range fields of fire and access to covered routes of withdrawal (fig. 72). In some situations, a tank should be positioned in a concealed, covered location and then moved up to its actual firing position to fire (fig. 73). Subsequently, during an action, the tank should be shifted when necessary to obtain better fields of fire or to avoid heavy antitank fire.

e. Vehicles not needed on the delaying position should be placed under cover or concealment to the rear of the position. Command post, supply, maintenance, and medical vehicles should be located well to the rear to insure continuous support during the critical period of the withdrawal from a delaying position. The commander must remain well forward to coordinate and control the actions of his unit.

184. Battalion Task Force—Conduct of the Delaying Action

a. As the enemy approaches the first delaying position, he is

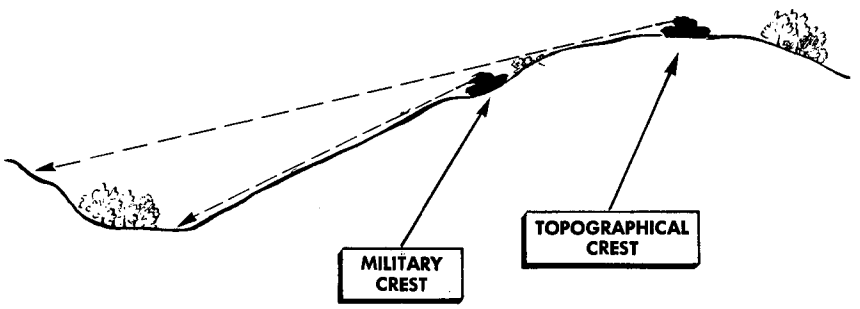

Figure 72. Tank firing position near topographical crest.

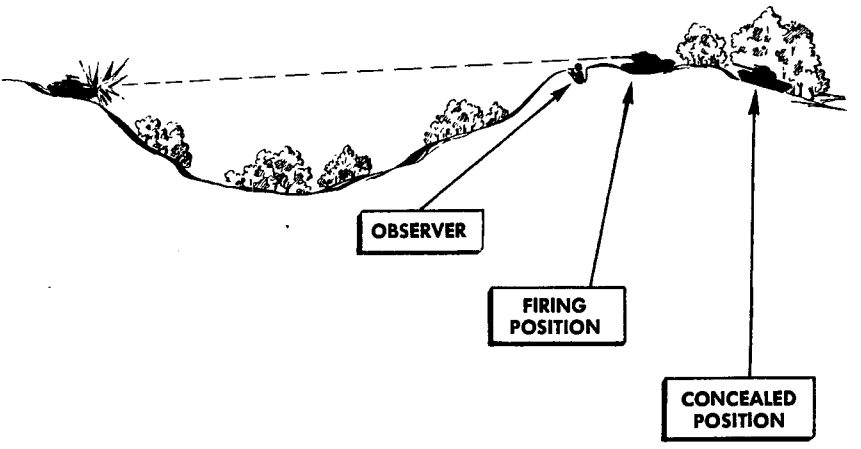

Figure 73. Concealed tank position.

brought under long range artillery, mortar, and Davy Crockett fire. As he closes with the position, he is engaged by all weapons of the delaying force at maximum effective range to force him to deploy, reconnoiter, and execute other time-consuming maneuvers.

b. The company teams normally are withdrawn from the delaying position before becoming decisively engaged with the enemy. The teams do not withdraw unless authorized to do so by the battalion task force commander. The successful employment of the delaying force is largely dependent upon proper timing. Proper timing is the result of effective reconnaissance, adequate security, and timely combat information. The next senior commander must always be kept informed of the unit situation to insure the issuance of orders for the withdrawal of the unit before it becomes too heavily engaged.

c. When the battalion task force receives the order to withdraw, it executes a continuous delay to the next designated delaying position. Although the company teams will have considerable freedom of action within their assigned zones, the task force commander will coordinate their movements to insure that one team will not be endangered by the too-rapid withdrawal of an adjacent team. Just before the withdrawals, some elements of the delaying force, preferably forces least heavily engaged, displace directly to the rear and occupy the next designated delaying position. The remainder of the unit maintains contact with the enemy and continues to inflict delay between the first position and the next rearward delaying position employing all favorable terrain. Forces

remaining in contact should be composed primarily of tanks. These units when threatened with close engagement, slowly withdraw toward the next position when ordered. When the enemy has advanced within range of forces on the intermediate delaying position, he is subjected to the fires of elements occupying that position. Those elements provide overwatching fire to the delaying elements that have remained in contact. When forced back by the enemy, the elements that have remained in contact rejoin that part of the team that has moved back to the intermediate delay position. When he is no longer able to hold the position without becoming decisively engaged, the team commander repeats the procedure.

d. The battalion task force reserve may be used to counterattack to extricate a heavily engaged unit, destroy an enemy penetration, block an enemy threat to the front or flanks, cover the withdrawal of elements of the delaying force, or to reinforce one or more elements of the delaying force. When a counterattack is conducted to assist in extricating a heavily engaged force, the action will consist of a strike against an enemy flank just in rear of his forward elements. This action is conducted as a tank sweep and may be conducted without a terrain objective.

e. Command, control, and timing of counterattacks are most critical. The commander must exercise utmost vigilance to insure that his unit does not become so involved with the enemy that it cannot break off the action. These counterattacks are for limited objectives, if used, and are supported by artillery, mortars, Davy Crockett weapons, and elements of the delaying force. Similiarly, company teams may execute counterattacks for the same reasons but on a more limited scale. Figure 74 illustrates this technique. (See FM 17–1, for a discussion of technique of employment of reserves.)

185. Company Team Preparation For Withdrawal to Next Delaying Position

a. After occupying the initial delaying position, the tank company team commander makes a plan for the reconnaissance of, and occupation of, the next delaying position to the rear. Rearward positions that may be occupied during the course of a delaying action, and the route or routes thereto, should be thoroughly reconnoitered in advance. A complete plan for the withdrawal to, and organization and defense of, such a position should be the result of this reconnaissance. When prior reconnaissance is impossible, the delaying force reconnoiters to the rear while it engages the enemy. Reconnaissance to the rear is frequently conducted

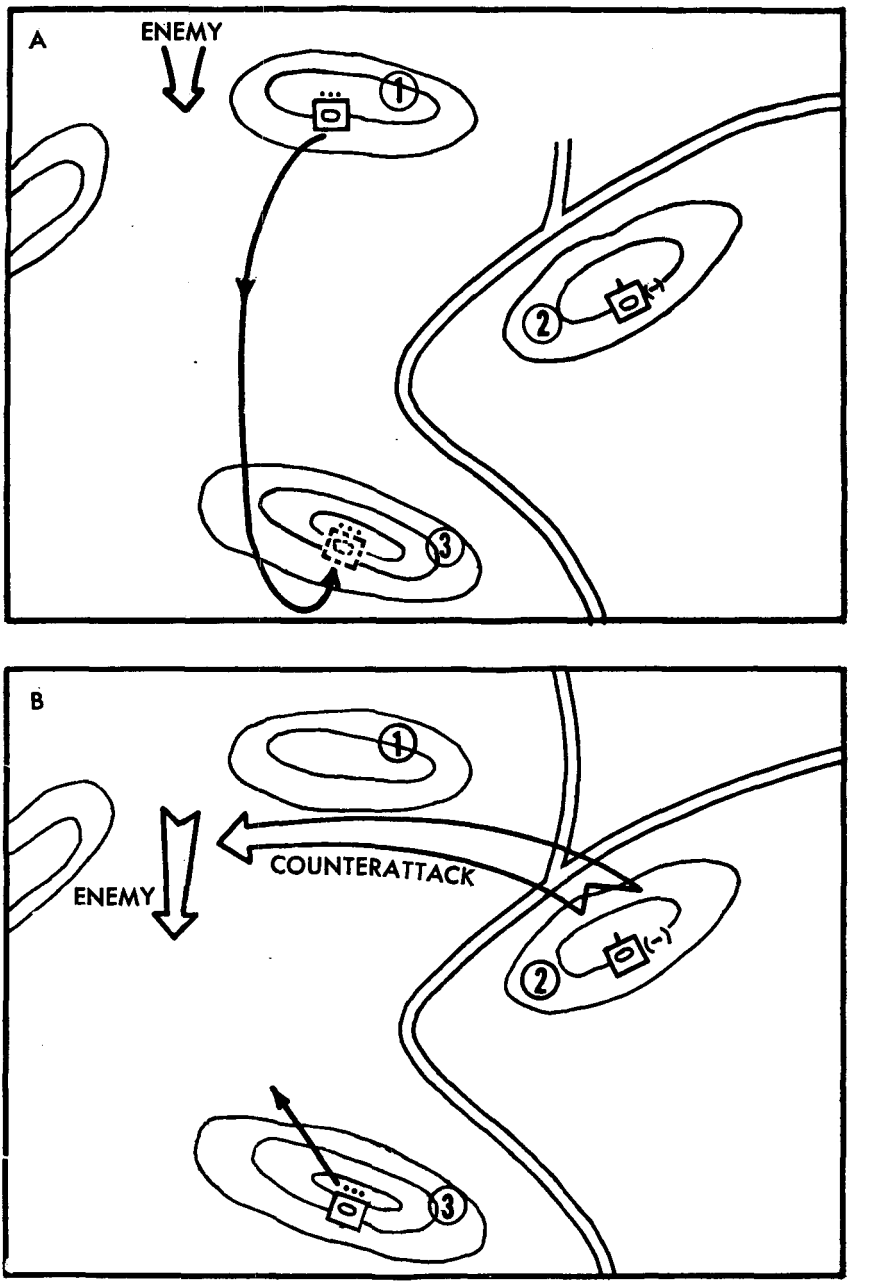

Figure 74. Company delaying action. In situation A, a tank platoon withdraws from position (1) to (3). In situation B, the remainder of the company counterattacks from position (2).

by a representative of the company team commander, usually his executive officer. Any elements of the battalion armored cavalry platoon that may be attached can be used for this reconnaissance. In addition, attached armored cavalry platoon elements may be employed to guide platoons into selected delaying positions. In fast-moving situations, it may not be possible for the platoon leader or his representative to participate in the reconnaissance to the rear.

b. In planning and executing withdrawals to successive delaying positions, the following desirable characteristics of routes of withdrawal must be considered.

(1) Provide cover from enemy fire.

(2) Provide concealment from enemy observation.

(3) Lead directly to the next delaying position.

(4) Have good trafficability.

c. Each tank commander is usually responsible for the selection of the route he will use to move his tank. He must know the withdrawal plans of his platoon.

d. In addition to planning the occupation of the next delaying position, it is desirable to have some part of the delaying force occupy it in advance, to prepare positions and to cover the arrival of the remainder of the force. In many situations, troops cannot be spared for such a purpose. However, it may be possible to accomplish this and not detract from the actual delaying strength of the unit. For example, if during daylight and conditions of good visibility, and if the terrain is relatively open, there may be a lesser requirement for infantry. In such a case, a part of the infantry might well be sent back to start the organization of the next delaying position.

186. Company Team Withdrawal to the Next Delaying Position

a. General. The company team withdraws to the next delaying position normally only on order of the battalion task force commander, as a result of enemy pressure, or to conform to the movement of adjacent units.

b. Technique of Disengagement. Before the withdrawal of the initial element, company headquarters vehicles and troops are moved to the next delaying position. The decision whether to withdraw the most heavily or least heavily engaged units first is a difficult one. To withdraw the most heavily engaged units first from the area of greatest enemy pressure may subject the entire command to encirclement and destruction. To withdraw the least

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heavily engaged unit first may result in loss of all or a major part of the most heavily engaged units. The decision must be based on determining which plan best preserves the integrity of the force and best contributes to the overall accomplishment of the mission. The company team commander may request artillery and mortar fires through the accompanying forward observers or Davy Crockett fire through command channels. On occasion, the task force commander may commit his reserve, if the company team is having difficulty disengaging. When the team commander has disengaged his forces, he should take steps to maintain observation over the advancing enemy. Elements of the battalion armored cavalry platoon if attached can be used for this purpose. Otherwise, a tank platoon, or attached infantry, may be assigned the mission.

c. Procedure. The procedure that a tank company team employs in moving back to a successive delaying position will vary, depending on the enemy situation and the terrain and weather (fig. 75). The team may:

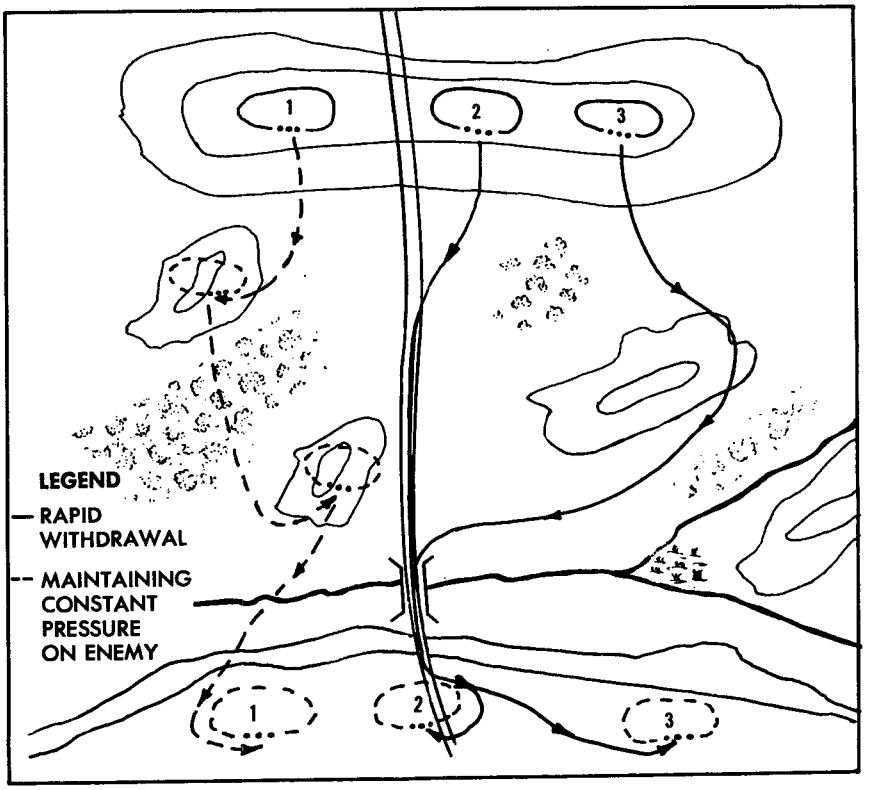

Figure 75. Methods employed in withdrawal to next delaying positions.

(1) Withdraw to the next delaying position, maintaining a constant pressure against the advancing enemy. In such a withdrawal, the tank platoons are usually directed to withdraw by leapfrogging from one terrain feature to another (fig. 76). The team commander determines which platoon is to move first and instructs the platoon leader to move to a terrain feature to the rear to cover the withdrawals of other platoons. As soon as the first platoon dispatched to the rear is in position, the team commander orders one or more of the remaining platoons to move back.

(2) Execute a rapid withdrawal and move directly back to the next delaying position. Once a successful disengagement from enemy forces has been effected, platoons move to the rear, along parallel routes, to their assigned areas in the next delaying position. Such a procedure may be used at night, when no favorable terrain from which to delay the enemy exists between delaying positions, or when it is necessary to conform to movements of adjacent troops. One tank platoon should be assigned the mission of keeping the enemy under observation and fire as the remainder of the team occupies its new position.

(3) Employ a combination of the procedures discussed ((1) and (2) above). This combination may be especially appropriate when it is necessary for the company team to conform to the movements of adjacent forces.

d. Order for Withdrawal. The company team commander will give the order for the actual withdrawal. One of the basic principles of retrograde operations is that no element should ever move to the rear without specific authority to do so.

e. Timing of Withdrawal. Units must withdraw before they become decisively engaged or enveloped by the enemy.

f. Security During the Withdrawal. It is necessary to have rear and flank protection when moving to the next position. In small units, this security will be achieved by having the various elements of the unit cover or protect each other as they move to the next delaying position. If a rapid withdrawal is initiated, steps must be taken to keep the advancing enemy under constant observation. Elements of the battalion armored cavalry platoon, which may be attached to the company team, and any supporting Army air vehicles, may be used for this purpose. In any event, a rapid and well-executed withdrawal is usually the best counter against the enemy interfering with the movement. To make such a with-

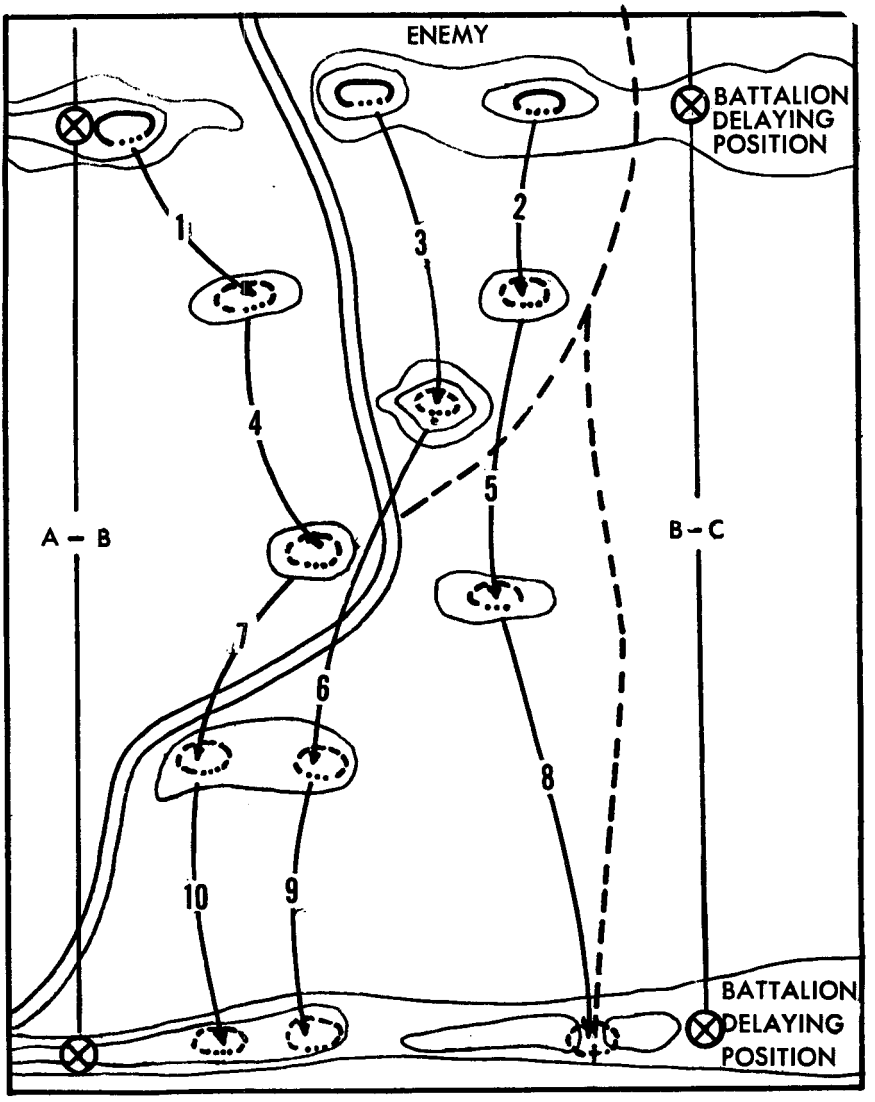

Figure 76. Tank company team in a delaying action; platoons leapfrogging to the rear, where favorable terrain to delay the enemy exists between the battalion delaying positions (numbers indicate order of withdrawal).

drawal, it is extremely important that each soldier understand exactly what he is to do and why.

Section III. WITHDRAWAL

187. General

A tank battalion task force may be required to withdraw to position itself for some other action. A part of the task force is

designated to function as a security force to cover the withdrawal. The task force commander may designate one or more company teams as a security force, or he may use elements of each company team for this purpose. A withdrawal may be conducted during daylight or at night. Generally, withdrawal is accomplished in two phases: a *disengagement* from action, followed by the *formation of march columns* for continued movement to the rear.

188. Night Withdrawal

a. Tank units will conduct night withdrawals whenever practicable because of the advantages gained under cover of darkness. In the conduct of night withdrawals, units in contact designate security elements to cover the withdrawal of the remainder of the unit. These security elements are mechanized infantry, and they remain in position while the remainder of the unit (predominately tanks) withdraws over designated routes, forms into march column, and continues movement to the rear. On order of the next higher headquarters, the security elements withdraw and rejoin their units. Supporting fires are used to cover track and engine noise and provide support for the security forces.

b. An illuminated night withdrawal may be conducted under favorable conditions. Daylight techniques may be used with tanks using night firing techniques.

c. Administrative support and all other nonessential vehicles and installations are withdrawn during the initial phase of the operation. Necessary combat support remains in position to support the tactical elements.

189. Daylight Withdrawal

Tank units can conduct successful daylight withdrawals because of their high degree of armor protection, mobility, and firepower. The procedure used in a daylight withdrawal is similar to that used in a night withdrawal. The security elements are predominately tanks and maximum use is made of all fires to assist in disengagement. Movement of the main body is expedited by units (predominately mechanized infantry) moving directly to the rear and then into march columns. Smoke can be used to screen movements. After the main body has withdrawn, security elements withdraw on order of the next higher headquarters.

a. Zones or Routes of Withdrawal. A battalion task force usually will be assigned a zone of withdrawal. The boundaries of

the zone will include the next delay position. If more than one unit of the higher command is using routes in the zone of the task force, the higher headquarters may assign a route to the task force. The task force commander usually assigns routes to his subordinate units. If routes are available, he may assign a separate one to each unit, to speed the withdrawal. The commander must exercise strict control and supervision of the withdrawal, to maintain the schedule prescribed. If the withdrawal includes passage through friendly front line units, close coordination with these units must be made. Plans should include provisions for guides from the unit being passed through, liaison, and recognition signals. Designated routes must be reconnoitered to insure that they are adequate and well marked.

b. Security. The commander may designate one or more elements as a security force, or he may use elements of each front line unit for this purpose. It is desirable that all elements of the security force be controlled by one commander. The strength of the security force depends primarily on:

(1) The number of troops available.

(2) The degree of enemy activity.

(3) The amount of front to be covered.

c. Security Force Actions. The security force normally conducts a delaying action. The length of time that the force remains in contact with the enemy depends upon the unit's mission. If the unit is moving to a defensive position to the rear, the security force remains in contact with the enemy until the new position is occupied. When the withdrawal is part of a retirement, the security force remains in contact with the enemy until the main body has disengaged with the enemy. Mortars and attached or supporting artillery must withdraw by echelon, so that they can provide fire support for the security force. The time schedule must be followed exactly.

d. Priority of Withdrawal. As a general rule logistical support units and headquarters elements not needed for tactical control are withdrawn first, followed by the reserve or uncommitted units. Forward units are then withdrawn. The security force is the last element to withdraw.

190. Tank Company Team—Daylight Withdrawal

a. In a daylight withdrawal, the tank platoon or company may act as part of the battalion task force reserve, as the security force, or as one of the elements in contact with the enemy.

b. As a part of the task force reserve, the platoon or company may be:

(1) Employed as a counterattacking force to permit the withdrawal of a unit that is heavily engaged. Such a counterattack is a limited-objective attack and is conducted by the entire task force reserve.

(2) Employed as the covering force to occupy a position from which it can cover by fire the withdrawal of units in contact with the enemy.

(3) The first element to move to the rear when it is not required to assist engaged units in disengaging from the enemy.

c. If the battalion task force commander uses elements of each forward company team as a battalion security force, the tank company team commander normally employs about one-third of this unit and one-third to one-half of his crew-served weapons as his part of the security force. This security force covers the withdrawal of the company team main body and withdraws on order of the team commander in accordance with instructions issued by the task force commander. The security force may be formed by:

(1) Elements of tank and rifle platoons remaining on the platoon position. These elements are placed under a single commander and form a composite security force. By this technique, the security force is quickly formed with a minimum of movement. For example, a tank company team with a mechanized rifle platoon attached might execute its withdrawal as indicated in figures 77 and 78. In figure 77 the team has 2 tank platoons and 1 mechanized rifle platoon on line, the third tank platoon having previously been ordered to start its move to the rear. Figure 78 shows the bulk of the team en route; elements of the platoons have been left in position to form a composite security force.

(2) The designation of a platoon-size combined arms team to act as the security force.

d. A tank company team given a security force mission for the entire battalion task force organizes for combat and conducts its actions in essentially the same manner as the security force uses in the mobile defense.

e. For a tank company team in contact with the enemy and not required to use some of its elements as part of the battalion security force, disengagement actions are similar to actions of units

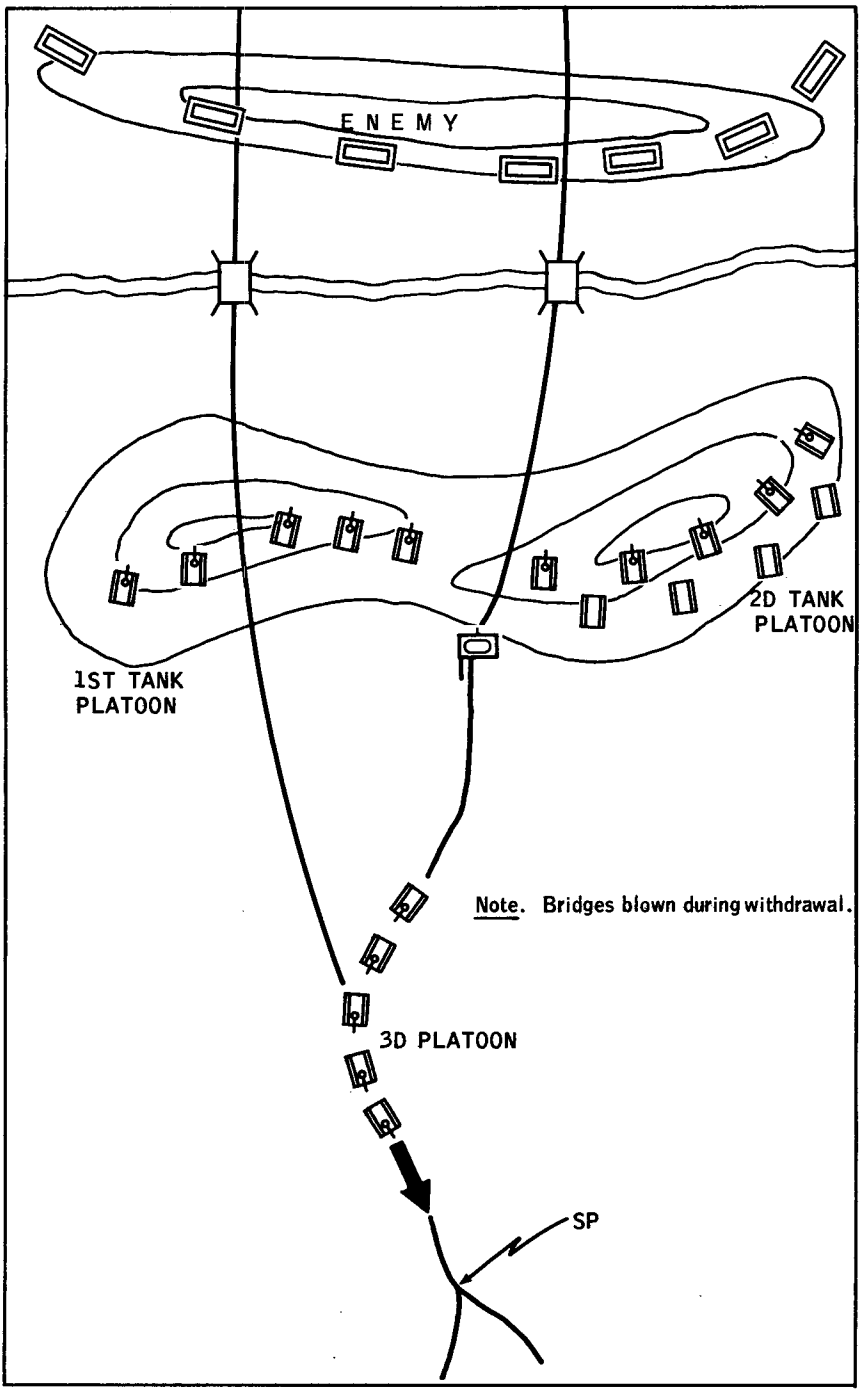

Figure 77. Initiation of withdrawal when a front-line company is forming part of the battalion security force.

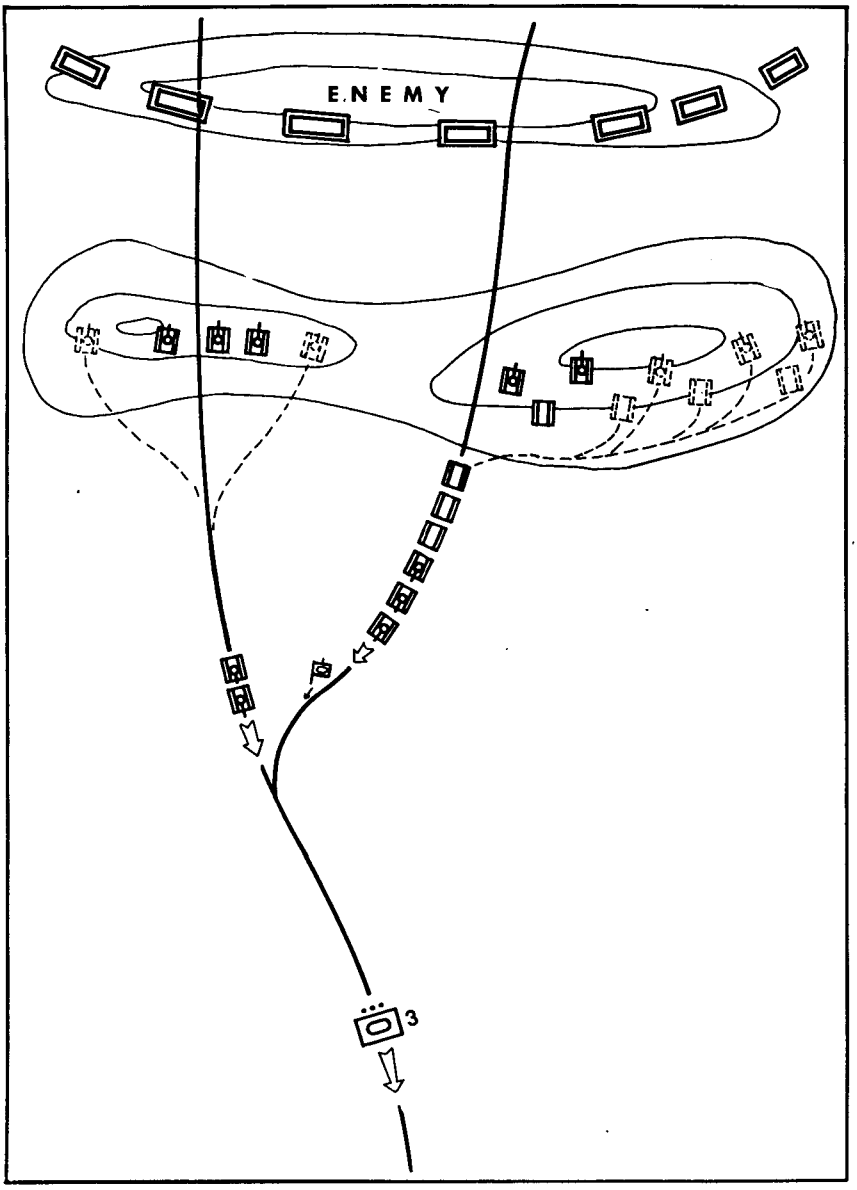

Figure 78. Elements of tank and mechanized rifle platoons as part of the security force in a withdrawal.

conducting a withdrawal from an initial or subsequent delaying position. Units not engaged with the enemy are the first to withdraw. When contact with the enemy is broken, they withdraw rapidly. However, when the enemy strength is not concentrated in any particular platoon area, platoons may be ordered to withdraw simultaneously. The commander assigns platoon routes of withdrawal and designates a start point (SP) where the platoons will form into a company team march column (fig. 78).

f. See FM 17–1 for additional details of daylight withdrawal.

191. Tank Company Night Withdrawal

a. Successful night withdrawal depends primarily upon deception, secrecy, and control. Darkness limits hostile air and ground observation and this must be exploited.

b. A night withdrawal is conducted by a company team in essentially the same manner as a daylight withdrawal. The following additional considerations apply:

(1) A night withdrawal normally is slower than a daylight withdrawal.

(2) Effective movement control measures will offset, to some degree, the difficulty caused by loss of visual contact.

(3) Troops left in contact use whatever deceptive measures are available to create the impression that a much larger force is on the position. Such deceptive measures include firing artillery, moving tanks so that their engines can be heard, and keeping up the normal sounds associated with a completely manned position.

(4) Withdrawing units move simultaneously if possible. Formations are closer than in a daylight withdrawal, and movements are conducted with greater emphasis on secrecy and security.

(5) The security force withdraws at a prescribed time or on order.

c. See FM 17–1 for additional details of a night withdrawal.

CHAPTER 10
MECHANIZED DIVISION TANK BATTALION

Section I. ORGANIZATION

192. General

a. This chapter is a guide for the tactical employment of the mechanized division tank battalions. Reference is made to chapters 1–9 as appropriate in this discussion.

b. The mechanized division tank battalion is both an administrative and a combat unit, with supply, medical, and maintenance facilities. Its continued operation is dependent upon adequate supply of fuel, lubricants, repair parts, and ammunition.

c. The only organizational difference between the mechanized division tank battalion and the armored division tank battalion is the family of radios used.

Section II. FUNDAMENTALS OF EMPLOYMENT, MECHANIZED DIVISION TANK BATTALION

193. Mission and Capabilities

The mission and capabilities of the mechanized division tank battalion are the same as for the armored division tank battalion as set forth in chapter 1.

194. Considerations Affecting Employment, Mechanized Division Tank Battalion

a. When a mechanized division tank battalion is employed as a reinforced unit, the method of its employment is generally the same as that of a tank battalion task force of the armored division. However, in the mechanized division, the tank battalions will more frequently be used to reinforce and support mechanized brigade and mechanized infantry battalion operations. Other differences between mechanized and armored division tank unit employment, which must be given consideration in a comparison of methods of employment are:

(1) The smaller ratio of tanks to mechanized units when tanks are distributed among all brigades and battalions.

(2) Means of communication between tanks and mechanized infantry.

b. The tank battalion can move simultaneously all organic troops and equipment with organic transportation; however, the battalion cannot be air-transported unless the AR/AAV is substituted for the main battle tank.

195. Operations and Employment

a. Battalion Commander and Staff. The tank battalion commander in the mechanized division has the same responsibilities as does the tank battalion commander in the armored division. The organization and operation of the battalion staff are similar to those of the staff of the armored division tank battalion. To provide maximum assistance to detached companies, the tank battalion must maintain coordination and liaison with the division staff, the brigade staff, and the tank company commanders. Staff visits to each company should be made frequently.

b. Method of Operation.

(1) Organization for combat and operations of the mechanized division tank battalions generally follow the doctrine, tactics, and techniques contained in chapters 1–9 and FM 17–1.

(2) The method of employment depends upon the division mission, information of the enemy, obstacles, weather, terrain, and the number of tank units available to the division commander. After considering these factors, the division commander determines where and in what force tanks should be employed. The guiding principle is that the battalions should be employed in the method that will most decisively influence the action. Cross attachment between tank and infantry battalions and companies is most desirable and provides the commander with a combined arms force. Tank units should be employed by concentrating them in mass at the decisive time and place to make a penetration or to envelop an assailable flank, rather than by dissipating them on a broad front. The fewer the number of tanks available to the commander, the greater is the requirement for the concentration of the tanks to obtain effective firepower and shock action.

(3) In certain situations a tank company may be attached to the armored cavalry squadron. Such a company is

usually employed to lead an attack and to provide added antitank capabilities.

(4) A battalion may become a task force with the attachment of other combat and combat support, and, when required, administrative support units. Normally the tank battalion operating as a task force requires the attachment of mechanized infantry and engineers and the support of artillery, Army aviation, and administrative support units.

Section III. OFFENSIVE OPERATIONS, MECHANIZED DIVISION TANK BATTALIONS

196. General

a. The principles outlined in chapter 7 and FM 17–1 apply to the mechanized division tank battalion.

b. When the tank battalion is operating as a battalion task force, under either division or brigade control, it conducts offensive operations generally according to the principles set forth in chapter 7, except as discussed below.

197. Preparation for the Attack

a. General. In preparation for the attack, the steps taken by a mechanized division tank battalion commander closely parallel those discussed in chapter 7.

b. Organization for Combat (chs. 2 and 7).

c. Scheme of Maneuver. The fundamental methods and techniques of employing tank and mechanized infantry units are discussed in chapters 4 and 7, FM's 17–1 and 7–20.

Section IV. DEFENSIVE OPERATIONS, MECHANIZED DIVISION TANK BATTALION

198. General

The principles and techniques of both the mobile and area defense as set forth in chapter 8 are equally applicable to the mechanized division tank battalion.

199. Defensive Combat by the Mechanized Division

The mechanized division will normally conduct the mobile defense; however, it is capable of conducting an area defense when

required. In the mobile defense, the bulk of the division's tank strength normally will be employed in the division striking force with sufficient tank units attached to the security force and forces in the forward defense area to provide necessary antitank defenses for these elements. When conducting an area defense, there normally will be increased tank strength allotted to the forward forces with one or more of the tank battalions retained in reserve.

200. Organization for Combat in Defense

a. Mobile Defense. When the mechanized division is conducting a mobile defense, the striking force should contain the preponderance of the division's tank strength. The tank battalion is employed most effectively as part of this striking force. The tank battalion, or one or more tank companies may be employed with the security forces or fixing forces as required. The principles of organizing for combat in the mobile defense for the employment of the armored division tank battalion are equally applicable to the mechanized division tank battalion (ch. 8).

b. Area Defense. When the mechanized division is conducting an area defense, or one or more tank battalions normally will be employed with the forces in the forward defense area. One or more tank battalions, with or without attachments, may be employed with the division reserve brigade, or as the division reserve. A tank battalion reinforced may be used to establish the division general outpost. The principles of organization for combat in the area defense are the same as presented in chapter 8.

201. The Tank Company With the Brigade in the Forward Defense Area

The commanders of the forward mechanized infantry brigades in the forward defense area employ attached tanks to constitute a mobile reserve and to provide antitank protection for their battle areas. Additionally, tanks furnish direct-fire support forward of the battle area, participate in counterattacks of the mechanized infantry battalion, and may reinforce the combat outpost. A part of the tanks may be placed in positions from which they can fire in front of the FEBA; normally these tanks will be located within or close to rifle platoon defense areas. The tanks may be positioned in depth, cover possible enemy tank approaches from the front, flanks, and rear. The tanks in depth are prepared to assist the striking force or reserve in the counterattack. They usually are attached to the counterattacking force.

202. A Tank Battalion Attached to the Division Striking Force (Mobile Defense) or Reserve (Area Defense)

a. Mobile Defense. The counterattack capabilities of the division striking force are greatly increased by the attachment of all or the greater part of a tank battalion. The employment of a tank battalion as part of the striking force is similar to its employment in the attack. When a tank battalion is employed in the striking force, the battalion commander prepares counterattack plans for the employment of his force based on orders of the brigade commander who outlines his concept and prepares the overall counterattack plans for the brigade. The tank battalion as part of the division striking force may have two missions to perform: a blocking mission and a counterattacking mission. Any enemy penetration must be slowed or stopped before a counterattack can be advantageously launched. The infantry elements, reinforced by part of the tanks, may be used to block a penetration, if other troops or nuclear fires have not accomplished this mission; and the major part of the tank battalion may be used to destroy the enemy penetrating force. This is a combined and coordinated effort; the tank elements, properly reinforced, should be employed in the maneuvering force the counterattack should be conducted in accordance with doctrine contained in chapter 8, section III.

b. Area Defense. Although the tanks attached to the striking force or reserve may be occupying firing positions, they must be prepared to move immediately to any part of the division front to reinforce threatened areas, eliminate penetrations, or to block.

c. Security Forces. When the reserve performs a general outpost mission for the mechanized division, all or part of a tank battalion may be attached to the GOP force.

Section V. RETROGRADE OPERATIONS, MECHANIZED DIVISION TANK BATTALION

203. General

The mechanized division tank battalion conducts retrograde operations employing the tactics and techniques set forth in chapter 9.

204. Withdrawals

a. The tank battalion, because of its characteristics, can break contact with the enemy more rapidly than can dismounted mechanized infantry units. In some situations, the division may use a tank battalion, reinforced, as a covering force in a daylight

withdrawal. In such cases the tank battalion fights a delaying action after the mechanized infantry have started their rearward movement. At night, tanks normally are withdrawn before mechanized infantry.

b. It may be necessary for the tank elements to counterattack to enable the mechanized infantry to start their withdrawal. Just before the time the withdrawal starts, reinforced tank elements make a coordinated attack in a vital part of the division or brigade zone, supported by all available fires. The extent of the attack may be limited to a demonstration on a broad front with all tanks deployed, but it must be carefully planned and coordinated. If the terrain permits, the tank elements may occupy positions immediately in rear of the mechanized infantry units that will withdraw; these units, under the cover of supporting fires by the tanks and other weapons, withdraw through the positions occupied by the tanks. The tanks then fight a delaying action until the mechanized infantry have withdrawn to their new positions.

205. Delaying Action

See chapter 9 for details of conducting a delaying action applicable to the mechanized division tank battalion.

CHAPTER 11
INFANTRY DIVISION TANK BATTALION

Section I. ORGANIZATION

206. General

a. This chapter is a guide for the employment of the infantry division tank battalion. Reference is made to chapters 1–9 as appropriate in this discussion.

b. The infantry division tank battalion is both an administrative and a combat unit, with supply, medical, and maintenance facilities. Its continued operation is dependent upon adequate supply of fuel, lubricants, repair parts, and ammunition.

c. Organizational difference between the infantry division tank battalion and the armored division tank battalion is the family of radios used.

Section II. FUNDAMENTALS OF EMPLOYMENT, INFANTRY DIVISION TANK BATTALION

207. Mission, Capabilities, and Considerations

a. Mission and Capabilities. The mission and capabilities of the infantry division tank battalion are identical to those of the armored division tank battalion (ch. 1).

b. Considerations.

(1) Ideally the infantry division tank battalions are employed as individual tank battalion task forces and the method of employment is generally the same as that of a tank battalion task force of the armored division. The tank battalions may be used to reinforce and support infantry brigade and battalion operations.

(2) In the infantry, the tank battalions are the only sizeable combat units that have many heavy tracked vehicles. This difference between the tank battalions and other combat units of the division emphasizes certain problems that must be carefully considered by the infantry commander. Among these problems are:

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(*a*) The necessity for a constant and adequate supply of fuel and lubricants.

(*b*) Sensitivity of tanks to terrain, weather conditions, and obstacles.

(*c*) The necessity for extensive maintenance.

(3) The tank battalion can move simultaneously all organic troops and equipment with organic transportation; however, when the battalion is equipped with the AR/AAV, it can be air-transported as can most of the other units of the infantry division.

208. Operations and Employment

a. Battalion Commander and Staff. The tank battalion commander in the infantry division has the same responsibilities as the tank battalion commanders in the armored division. In addition, he should act as armor advisor, including antitank warfare, for the appropriate commander. The organization and operation of the battalion staff are similar to those of the staff of the armored division tank battalion. Additional problems in operations, logistics, and administration confront the battalion commander and his staff when the companies of the battalion are attached to infantry brigades, in that the infantry battalions do not possess sufficient organic logistical support to support tank companies when attached to battalions. To provide maximum assistance to detached companies, the tank battalion must maintain coordination and liaison with the division staff, the brigade staff, and the tank company commanders. Staff visits to each company should be made frequently.

b. Method of Operation.

(1) The operations of the infantry division tank battalions generally follow the doctrine, tactics, and techniques presented in chapters 1–9 and FM 17–1.

(2) The method of employment depends upon the division mission, information of the enemy, obstacles, weather, terrain, and the combat units available to the division commander. In general, it is similar to the employment of the mechanized division tank battalion (ch. 10).

Section III. OFFENSIVE OPERATIONS, INFANTRY DIVISION TANK BATTALION

209. General

a. The principles outlined in FM 17–1, covering the purposes of

offensive action, forms of offensive action, distribution of forces, and control measures, generally apply to the infantry division tank battalion.

b. When the tank battalions are operating as task forces, under either division or brigade control, they conduct offensive operations generally according to the principles set forth in chapter 7, except as discussed below.

210. Preparation for the Attack

a. General. In the preparation for the attack, the steps taken by an infantry division tank battalion commander closely parallel those discussed in chapter 7. However, the infantry division tank battalion commander usually makes a recommendation to the appropriate commander as to the best method of employing his battalion.

b. Organization for Combat. While the distribution of tank strength throughout the infantry division will vary with the specific situation, a tank battalion or one or more tank companies can be attached to assaulting brigades. The battalion may be employed under division control when required. It will be organized for combat as discussed in chapter 7.

c. Employment. The fundamental methods and techniques of employing tank-infantry teams are discussed in chapters 4 and 6. In the infantry division, tanks and infantry may be employed in such teams.

211. Conduct of the Attack

a. General. The infantry division tank battalion conducts attacks in the same manner as the armored division tank battalions. (See ch. 7 and FM 17–1.)

b. Movement to the Objective. Although it is not desirable for the pace of the tank attack to be slowed to the pace of dismounted attacking units, it is sometimes necessary to delay the tank unit's arrival on the objective by making greater use of movement by bounds or a delayed time of departure. Hostile antitank fire, or terrain that prevents a continuous and coordinated movement by tanks and infantry, may make it desirable for the tanks to move by bounds or to cross the line of departure after the dismounted element. Before the attack, plans must be made to coordinate the rate of movement of tanks and dismounted units. Every effort should be made to allow the tanks to advance rapidly.

Section IV. DEFENSIVE OPERATIONS, INFANTRY DIVISION TANK BATTALIONS

212. General

The principles and techniques of defense, as discussed in chapter 8, and FM 17–1, apply to the infantry division tank battalions. In the application of these techniques, additional consideration must be given to the mobility of the mechanized and infantry divisions.

213. Defensive Combat by the Infantry Division

The infantry division is capable of conducting numerous variations of the area defense. Because of the lack of organic mobility in the infantry battalions, the division is incapable of conducting a mobile defense without considerable reinforcement with varying combinations of armored personnel carriers and trucks for transport of infantry elements.

214. Missions Assigned the Tank Battalions During Defensive Combat

a. The infantry division tank battalions must be assigned defensive missions in which they can use their mobility and shock action to the greatest possible extent under the existing conditions. These missions include:

(1) Adding strength to the division reserve.

(2) Adding depth to antitank protection in the forward defense area.

(3) Acting as a general outpost for the division.

b. In most cases, units of the battalions can best assist in the defense by employing offensive tactics. Every effort must be made to avoid static positions or the emplacement of tanks. All tanks, regardless of their mission or location, should be so placed that they have clear fields of fire and can be readily maneuvered.

215. Methods of Employing the Tank Battalions in Defense

a. There are several possibilities for the employment of the infantry division tank battalion, and elements thereof, in the defense. Among these are:

(1) Both battalions, attached to the division reserve brigade.

(2) One battalion attached to the brigade having the most likely enemy armor approach, with the other battalion attached to or as the division reserve.

(3) One battalion (–) attached to each of 2 brigades and 2 companies attached to the division reserve brigade.

b. The ability of a tank battalion to operate as an element of the reserve to destroy any enemy that may penetrate the battle area, decreases as the number of companies detached from the battalion increases. When employed as part of the reserve a battalion should be retained as a unit whenever possible.

c. The terrain to be defended, and the composition of the enemy forces facing the position, usually have a decisive influence on the decision as to how the battalion is employed. The battalion should be used to increase the counterattack strength of the division and to insure adequate defense against tank attacks. Terrain that affords good fields of fire and long range observation may permit the concentration of the tank elements in a rearward position. In the disposition of the tank elements, care must be taken to insure that terrain corridors that are good avenues of approach for enemy tanks, are covered.

216. The Tank Company With Forward Brigades

The commander of the infantry brigades in the forward defense area employs attached tanks to provide a mobile reserve and to provide antitank protection for his area. Tank companies may be retained under brigade control or attached to infantry battalions to form battalion task forces. Tanks may furnish direct-fire support, participate in counterattacks, and participate as part of the brigade security force. He may place a part of his tanks in positions from which they can fire in front of the FEBA: normally these tanks will be located within or close to the rifle platoon defense areas. The remainder of his tanks may be placed in depth, covering possible enemy tank approaches from the front, flanks, and rear. The tanks in depth are prepared to assist the infantry battalion reserve in the counterattack; the tanks may be attached to the reserve upon its commitment.

217. Tank Battalions Attached to the Division Reserve

a. The counterattack capabilities of the division reserve are greatly increased by the attachment of all or the greater part of the tank strength. The division reserve in defense may often have two missions to perform: It may initially be employed as part of the general outpost, reverting to a containing mission and a counterattacking mission. Any enemy penetrations must be contained or partly contained before a counterattack can be advantageously launched. The infantry elements of the reserve, rein-

forced by part of the tanks, may be used to block and contain a penetration, if other troops or nuclear fires have not accomplished this mission, and the major part of the tank battalions used as a reserve to destroy the enemy penetrations. This is a combined and coordinated effort; the tank elements, properly reinforced, should be the maneuvering force.

b. Although the tanks attached to the reverse may be occupying firing positions they must be prepared to move immediately to any part of the division front to block or counter any enemy penetrations.

c. When the reserve performs the mission of general outpost for the infantry division, one of its normal attachments will be a division tank battalion. The tanks engage enemy armor and mechanized elements at maximum range. They facilitate rapid withdrawal of infantry elements. They withdraw over previously selected routes to their designated reserve area.

218. The Tank Battalions, Reinforced, as the Division Reserve

The infantry division tank battalion may be used as the division reserve. This may occur when all brigades are employed in the forward defense area or when the brigade, designated as the division reserve, is committed and the division must quickly reconstitute a mobile reserve. When employed as the division reserve, the battalion uses the tactics and techniques, prescribed for the mechanized tank battalion (ch. 10).

Section V. RETROGRADE OPERATION

219. Retrograde Operations

a. The infantry division tank battalion conducts retrograde operations using the general tactics and techniques applicable to the mechanized division tank battalion.

b. When participating in a withdrawal or delaying action, the tank battalion should be reinforced with motorized or mechanized infantry. As an alternative, infantry may be transported on the tanks after disengagement.

c. See chapter 9 for techniques of employment in retrograde operations.

CHAPTER 12
AIRBORNE DIVISION TANK BATTALION

Section I. GENERAL

220. General

a. This chapter is a guide for the employment of the airborne division tank battalion.

b. The airborne division tank battalion is designed to take part in joint airborne operations. All of its equipment is air transportable in Air Force medium transport aircraft and can be delivered by parachute. The infantry division is well suited to participate, when tailored so as to replace its tank units with airborne division tank units, in joint airborne operations in the air landed role. Therefore, the presentation that follows, unless otherwise indicated, is applicable to the employment of the airborne division tank battalion as a part of either the airborne or infantry division when participating in airborne operations.

221. Organization, Airborne Division Tank Battalion

Generally the airborne division tank battalion is organized the same as the tank battalions of the armored, mechanized, and infantry divisions. Significant differences are as follows:

a. The battalion is equipped with infantry band radios.

b. The tank companies are equipped with the 90-mm antitank gun, self-propelled (or AR/AAV) in lieu of main battle tanks.

c. When airlift or terrain is a limiting factor, wheeled vehicles can be substituted for the armored tracked vehicles authorized.

Section II. FUNDAMENTALS OF EMPLOYMENT, AIRBORNE DIVISION TANK BATTALION

222. Mission, Capabilities, and Considerations

a. Mission. The mission of the airborne division tank battalion is to close with and destroy enemy forces, using fire, maneuver, and shock action in coordination with other arms.

b. Capabilities. The airborne division tank battalion will have the following capabilities: [1]

(1) Conduct operations requiring firepower, mobility, armor protection, and shock action.

(2) Attack or counterattack under hostile fire.

(3) Destroy enemy armor by fire.

(4) Support infantry units by fire, maneuver, and shock action.

(5) Rapidly exploit the effects of mass destruction weapons.

(6) Provide organic nuclear and nonnuclear fire support.

(7) Conduct combat operations under limited visibility conditions employing infrared viewing devices and surveillance equipment.

c. Considerations.

(1) Airborne operations are normally initiated by an assault phase that is usually followed by a defensive phase that lasts until link-up is established with friendly forces. Concurrently with the defensive phase, limited offensive operations will be conducted to seize additional objectives that facilitate the defense or favor future operations. However, after initial objectives have been seized, the success of an airborne operation depends upon the successful defense of the airhead(s). All the combat power in an airborne division, including the tank battalion, can expect to be employed to seize initial objectives and then to defend until link-up is accomplished. Other differences between the employment of the airborne division tank battalion and other tank battalions are as follows:

(*a*) The much smaller ratio of tanks to infantry.

(*b*) The increased logistical problem entailed in providing an adequate supply of ammunition, fuel, and lubricants by means of air transportation.

(*c*) The necessity for extensive maintenance in an objective area where maintenance personnel, equipment, and facilities will be, by necessity, very limited.

(2) The equipment of the airborne division tank battalion can be delivered by parachute. However, with present equipment and techniques such delivery must be considered marginal. It is most desirable that these items be air landed.

1 Capabilities of armor protection, attack under hostile fire and shock action do not apply when equipped with the M56.

223. Operations and Employment

a. Battalion Commander and Staff. The tank battalion commander of the airborne division has the same responsibilities as do the battalion commanders in the infantry divisions. The organization and operation of the battalion staff are similar to that of the staff of the infantry division tank battalion. To provide maximum assistance to detached companies, the tank battalion must maintain coordination and liaison with the division staff, the brigade staff, and the tank company commanders. Staff visits to each company should be made frequently.

b. Method of Operation. The operation of the airborne division tank battalion generally follows the doctrine employed by the infantry division tank battalion contained in preceding chapters.

(1) When equipped with the M56, the airborne division tank battalion becomes primarily an antitank force. As such it provides the division with a mobile antitank support that normally will be employed by attachment of platoons and companies to brigades and airborne infantry battalions.

(2) When equipped with the AR/AAV, the battalion may be employed as the nucleus of a brigade or division reserve, or to reinforce airborne infantry units in both offensive and defensive operations.

Section III. ASSAULT PHASE OPERATIONS

224. General

Employment of the airborne tank battalion in the assault phase of an airborne operation will be characterized by decentralized control. Tank companies normally will be attached to airborne brigades or battalions. The airborne infantry battalion, augmented by artillery, engineers, elements of the tank battalion, and additional attachments as required, forms a task force. The seizure of assault objectives stresses the action of small units, and from the division and brigade level, involves the visualization of the action of the task force.

225. Preparation for the Assault

a. Task Organization.

(1) One or more tank companies may be attached to an airborne brigade for the assault phase. The brigade may in turn attach a company or one or more platoons to the

task forces. The allocation of tanks to the task forces will depend primarily upon the estimate of combat power necessary for seizure of initial objectives. During the assault phase the tank normally will be employed in the assault gun role.

(2) The airborne division tank battalion (–), with or without tank companies, may enter the objective area as part of the division or brigade reserve.

b. Echelonment. The entire airborne infantry battalion may enter the airhead in the assault echelon. The tank companies normally will enter as a part of the task force to which attached and the tank battalion (–) as part of the division or brigade reserve.

c. Marshalling and other preparations for the assault are described in chapter 10, FM 7–20.

226. The Assault and Consolidation

a. Upon reorganization on the drop zones or landing zones the elements of the tank companies participate in the seizure of objectives with the infantry unit to which attached.

b. Security forces may land on or move directly to the planned COP positions. Tank elements may be attached to these forces and move with these forces to furnish long range antitank fires.

c. Upon consolidation of the objectives the brigade or task force commander regains direct control of all tank units at the earliest opportunity to integrate them into the antitank defense plan for the defensive phase of the operation.

d. When elements of the tank battalion are employed as a part of the division or brigade reserve, the planning for air movement, landing, and reorganization are the same as for those elements attached to the task forces assigned assault objectives. When elements of the division or the brigade are simultaneously committed in widely separated areas, the reserve may be held in a departure area, prepared for aerial delivery on call.

Section IV. DEFENSE PHASE OPERATIONS

227. General

During the defense phase of an airborne operation, elements of the tank battalion may be employed primarily in the antitank role. Dependent upon the estimate of the enemy tank threat the commander may make tank elements part of his reserve.

228. Tank Elements With Forward Task Forces

All antitank weapons are integrated into the task forces antitank plan. First priority is given to covering approaches favorable to enemy armor. The remainder of the tanks may be placed to provide depth to the antitank fires to the front, flanks, and rear. The tanks in depth are prepared to assist the task force reserve in the counterattack.

229. Tank Elements Attached to the Division or Brigade Reserve

a. The entire tank battalion or the battalion (–) may be retained under division or brigade control as the division or brigade reserve. In this situation the tank elements should be reinforced with infantry and prepared for employment in the counterattack role.

b. For a discussion of the battalion as a part of the reserve, see paragraph 226.

230. Retrograde and Breakout From Encirclement

See chapter 9.

APPENDIX I
REFERENCES

1. Field Manuals

FM 1–15	Aviation Battalion, Infantry, Airborne, Mechanized, and Armored Divisions. (When published)
FM 1–100	Army Aviation.
FM 3–5	Tactics and Techniques of Chemical, Biological, and Radiological (CBR) Warfare.
FM 5–15	Field Fortifications.
FM 5–20	Camouflage, Basic Principles and Field Camouflage.
FM 5–25	Explosives and Demolitions.
FM 5–135	Engineer Battalion, Infantry, Mechanized, and Armored Divisions.
FM 6–20–1	Artillery Tactics.
FM 6–20–2	Artillery Techniques.
FM 6–21	Division Artillery.
FM 7–11	Rifle Company, Infantry, Airborne Infantry, and Mechanized Infantry Battalions. (When published).
FM 7–15	Infantry, Airborne Infantry, and Mechanized Infantry, Platoons and Squads.
FM 7–20	Infantry, Airborne Infantry, and Mechanized Infantry Battalions.
FM 7–30	Infantry, Airborne, and Mechanized Division Brigade.
FM 8–15	Division Medical Service, Infantry, Airborne, Mechanized, and Armored Divisions.
FM 9–30	Maintenance Battalion, Infantry, Airborne, Mechanized, and Armored Divisions.
FM 10–50	Supply and Transportation Battalion, Infantry, Airborne, Mechanized, and Armored Divisions. (When published)
FM 11–50	Signal Battalion, Infantry, Mechanized, and Armored Divisions. (When published)
FM 12–11	Administration Company, Infantry, Airborne, Mechanized, and Armored Divisions. (When published)
FM 17–1	Armor Operations, Small Units.

FM 17–12	Tank Gunnery.
FM 17–30	Armored Division Brigade.
FM 17–36	Armored Cavalry Units, Platoon, Troop, Squadron.
FM 17–70	Communication for Armor Units.
FM 20–32	Land Mine Warfare.
FM 20–60	Battlefield Illumination.
FM 21–5	Military Training.
FM 21–6	Techniques of Military Instruction.
FM 21–26	Map Reading.
FM 21–30	Military Symbols.
FM 21–60	Visual Signals.
FM 21–75	Combat Training of the Individual Soldier and Patrolling.
FM 22–5	Drill and Ceremonies.
FM 23–8	US Rifle, 7.62-mm, M14.
FM 23–30	Grenades and Pyrotechnics.
FM 23–35	Pistols and Revolvers.
FM 23–67	Machineguns, 7.62-mm, M60.
FM 23–92	4.2-Inch Mortar M30.
FM 30–5	Combat Intelligence.
FM 30–7	Combat Intelligence, Battle Group, Combat Command, and Smaller Units.
FM 31–10	Barriers and Denial Operations.
FM 31–15	Operations Against Irregular Forces.
FM 31–21	Guerrilla Warfare and Special Forces Operations.
FM 31–30	Jungle Operations.
FM 31–50	Combat in Fortified Areas and Towns.
FM 31–60	River-crossing Operations.
FM 31–70	Basic Cold Weather Manual.
FM 44–1	Air Defense Artillery Employment.
FM 44–1A	Air Defense Artillery Employment.
FM 54–2	Division Logistics and the Support Command.
FM 55–15	Transportation Corps Reference Data.
FM 57–10	Joint Airborne Operations.
FM 57–30	Airborne Operations.
FM 61–10	Command and Control Techniques.
FM 61–100	The Division.
FM 100–5	Field Service Regulations; Operations.
FM 100–10	Field Service Regulations; Administration.
FM 101–5	Staff Officers Field Manual; Staff Organization and Procedure.
FM 101–10	Staff Officers Field Manual; Organizational, Technical and Logistical Data.

FM 101–31 Staff Officers Field Manual; Nuclear Weapons Employment.

2. Regulations

AR 320–5 Dictionary of United States Army Terms.
AR 320–50 Authorized Abbreviations and Brevity Codes.

3. DA Pamphlets

DA Pam 310-series Military Publications (Indexes).
DA Pam 320–5 Glossary of Terms Employed Consistently Throughout ROAD Training Literature.
DA Pam 600–12 Personnel Service Guide.

APPENDIX II

THE BATTALION MORTAR AND DAVY CROCKETT PLATOON

Section I. GENERAL

1. General

This appendix presents the organization, mission, capabilities, and doctrine for the tactical employment of the battalion mortar and Davy Crockett platoon.

2. Mission

The battalion mortar and Davy Crockett platoon provides close and continuous 4.2-inch mortar and Davy Crockett fire support to its parent battalion.

3. Capabilities

The platoon has the following capabilities:

a. Delivery of a heavy volume of high explosive fire onto area or point targets.

b. Delivery of low-yield nuclear fire onto appropriate targets.

c. Screening large areas with smoke.

d. Battlefield illumination.

e. Delivery of toxic chemicals munitions onto area targets.

f. Marking targets for other weapons.

4. Organization

The battalion mortar platoon is organized as described in chapter 1 (fig. 5).

5. Duties

a. Platoon Headquarters.

(1) The platoon leader commands the platoon and supervises the training of all elements. He makes full use of the chain of command to assist him in carrying out these responsibilities. Specifically, he:

(*a*) Makes recommendations for the employment of his platoon.

(*b*) Is responsible for the employment of the platoon in accordance with orders received from the battalion commander or the unit to which attached.

(*c*) Issues orders to his leaders.

(*d*) Supervises execution of orders.

(*e*) Within guidance provided, selects position areas and controls the movement of all elements of the platoon not attached to other units.

(*f*) Keeps himself informed of the enemy and friendly situation.

(*g*) Established and maintains liaison with the supported units through the forward observer teams.

(*h*) Establishes a fire control system within the platoon.

(*i*) Prepares a plan for heavy mortar and Davy Crockett (DC) fire support.

(*j*) Within guidance provided, plans, initiates, and supervises the timely displacement of all elements of the platoon not attached to other units.

(*k*) Maintains adequate security.

(*l*) Supervises the supply of ammunition to each of the firing squads not attached to other units.

(*m*) Supervises the platoon communication system.

(*n*) Insures that liaison is established and maintained with the fire support coordinator (FSC).

(*o*) Performs other duties as a battalion special staff officer.

(2) The platoon sergeant is the second in command and principal enlisted assistant to the platoon leader and assists him in matters pertaining to discipline, training, and efficiency of enlisted men. He:

(*a*) Is in charge of ammunition supply for the platoon.

(*b*) Performs reconnaissance as directed by the platoon leader.

b. Fire Direction Center.

(1) The chief FDC computer:

(*a*) Takes charge of the fire direction center (FDC) and plans, coordinates, and supervises its activities and training under the direction of the platoon leader. He keeps himself informed of the tactical situation and the schemes of maneuver of the supported units.

He is responsible for the preparation of firing data for all fires.

(*b*) Makes the decision to fire mortars. When a target is reported, he examines its location relative to the front line, zones of fire, and reference points. Then, based on the nature of the target, ammunition available, the announced policy of the battalion commander, he decides whether to fire the mission, the number of mortars to be fired, and the amount of ammunition to be used in engaging the target.

(*c*) Is responsible for maintaining ammunition records and initiating ammunition supply action.

(*d*) Is responsible for informing the battalion headquarters of all intelligence information received in the FDC.

(*e*) Checks the accuracy of the chart operators, records, and posts intelligence and tactical information.

(2) The computers and instrument operator, under the supervision of the chief computer, operate and maintain firing charts for the platoon. They formulate and issue fire commands to the squads and maintain a firing record of each mission fired. They operate platoon fire control instruments. They also maintain ammunition records and advise the chief computer of ammunition status.

c. Forward Observer (FO) Teams. These teams accompany the forward units and advise the commander of the supported units of the capabilities of the mortar and DC weapons systems. They request fires for supported units, observe and adjust fire for the platoon, and may request and adjust artillery fires through the battalion mortar and DC platoon FDC. (For a detailed discussion of the duties of the forward observers, see FM 23–92.)

d. Davy Crockett Section. The section consists of a section headquarters and three squads. The section headquarters contains only a section leader. Each squad contains a squad leader, gunner, and driver. For sustained operation or for dismounted operation of any duration, each squad must be augmented with a trained assistant gunner from one of the mortar squads.

e. Mortar Squad. The mortar squad contains the men and equipment needed to serve one heavy mortar. The squad leader is responsible for the training, discipline, control, and employment of the squad. He supervises the movement of the squad to designated locations, the preparation of the firing positions, and the delivery

610-517 O - 61 - 14

of fires by the mortar crew. Squad members are cross-trained in the Davy Crockett weapons systems.

6. Communication

The platoon contains a flexible communication system using FM radios as the principal means. Wire is used to supplement or replace radio as required (fig. 79). Because of their habitual proximity to each other, wire is used normally as the primary means of communication between the firing squads and the FDC when the platoon is employed under centralized control.

7. Fundamentals of Employment

a. General. The employment of the platoon is based on its speed of operation and movement and its constant readiness to provide fire support. The platoon leader places himself where he can best control the employment of his platoon. He is often with the battalion commander or command group. He may control leading elements of the platoon during displacement, conduct reconnaissance, or visit the supported company teams for coordination.

b. Control. The platoon normally operates under battalion control and furnishes support to the line companies or company teams. The mortar section is usually employed in general support under the control of the platoon leader; however, a priority of fires may be assigned to a specific team to weight that team's effort. The Davy Crockett section is employed in general support when possible; squads are placed in direct support of company teams as required.

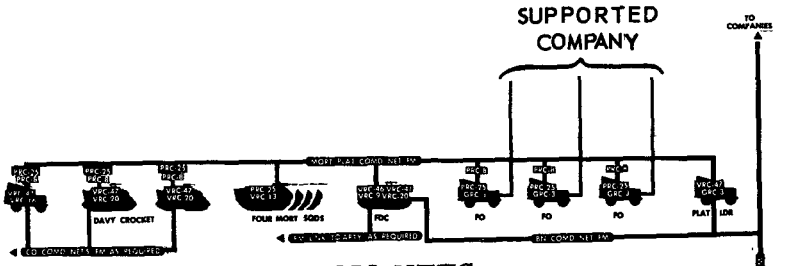
c. Concentration of Effort. The mortar section normally fires one mission at a time; however, it can fire two missions concurrently.

d. Movement. The platoon is 100 percent mobile. This mobility permits rapid maneuver of platoon fires throughout the battalion area of operations.

e. Security. The platoon is normally located within, or adjacent to, other friendly tactical or tactical support elements to obtain maximum security from the friendly elements. The platoon does have a limited capability for providing its own security by using platoon members as sentinels.

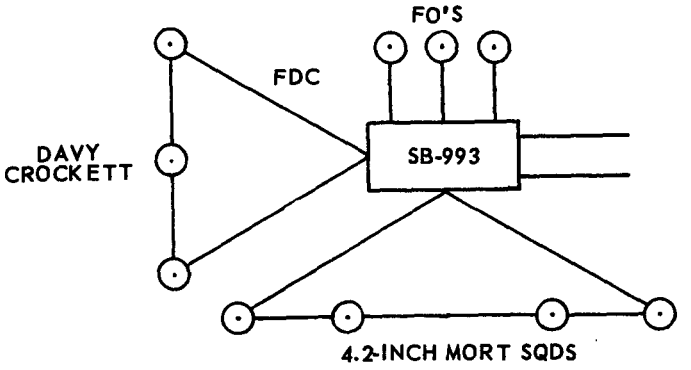
8. Conduct of Fire

See FM 23–92 and TC 23–( ) for conduct of fire details.



RADIO NETS

Note. Infantry band radios are used when organic to mechanized, infantry and airborne division tank battalions.



WIRE NET

Figure 79. Type communication nets.

9. Observation

a. General.

(1) Continuous observation affords flexibility of fires and serves as a principal means of gaining information about the enemy and own units.

(2) The forward observer's area of responsibility for observation is the zone or sector of the supported unit. He observes the most critical areas within the battalion's area of operations. He must maintain a close working relationship with artillery and company forward observers. Mortar and artillery observers may request and adjust each other's fires through their respective FDC. (For forward observer procedures and duties, see FM's 6–40 and 23–92.)

(3) The forward observers of the battalion mortar and Davy Crockett platoon normally observe Davy Crockett fires. However, any commander or mortar or artillery observer may observe the fires, provided he can establish communication with the squad delivering the fire. Aerial observers in communication with a delivery squad can adjust spotting rounds and the major caliber round can be delivered after they have moved a safe distance or placed a mask between themselves and the target area.

b. Observation Posts.

(1) Observation posts, including alternates, are established in the area of action of the supported unit to locate targets and direct fire for that unit and other units as may be required.

(2) An observation post should have the following desirable characteristics:

(*a*) Afford the most favorable view of the target area and zone of action.

(*b*) Afford ease of communication with the supported unit and the FDC.

(*c*) Be away from outstanding landmarks.

(*d*) Afford cover and concealment.

(*e*) Afford covered routes of approach from the rear.

(3) The observer selects alternate observation posts to use when hostile fires force him to move or when the primary post is blinded by smoke or haze. When practical, the alternate posts should have a covered route of approach from the primary post.

(4) The location of the observation posts must be coordinated with those of artillery and, when available, 81-mm mortar forward observers of attached mechanized infantry to insure overlapping coverage of the area forward of, and within, the battle area.

(5) The observer occupies positions and displaces to locations where he can best observe the zone of action of the supported unit.

c. Coordination of Observation. The battalion commander through his S2 coordinates all organic observation to provide maximum coverage. Additional observation is provided by the supporting artillery. Heavy mortar and artillery units cooperate in fire control by using each other's forward observers to observe and adjust fire. This insures support by the weapon that will best accomplish the mission.

d. Reports. The platoon observers report significant enemy and friendly activities directly to the FDC of the battalion mortar and DC platoon.

e. Aerial Observation. Army aerial vehicles may observe and adjust fires. Direct radio communication is established between the FDC and the observing aircraft (FM's 1–100 and 23–92).

10. Liaison

The platoon establishes and maintains continuous liaison with the artillery liaison officer. Communication is maintained with the battalion headquarters and the supporting artillery FDC. During the planning phase and during critical phases of operations, the platoon commander remains with or near the battalion commander. The forward observer teams coordinate with artillery forward observers and the company team commanders in whose area they are working. The platoon commander coordinates with supporting artillery through the artillery liaison officer.

11. Fire Direction

a. The definitions, objectives, techniques, and doctrine of fire direction for indirect firing and mortar gunnery are prescribed in FM 23–92. Davy Crockett techniques of fire are contained in TC 23–( ). The purpose of fire direction is to achieve:

(1) Continuous and accurate fire support under all conditions of weather, visibility, and terrain.

(2) Prompt massing of fires.

(3) Flexibility of fires.

(4) Simultaneous placing of fires on numerous targets.

b. The FDC is that element of the platoon consisting of fire direction and communication specialists and equipment that the commander uses for fire direction and fire control. The FDC is located where the fires of the platoon can best be controlled. The FDC helps the commander to control the fire missions, translate target intelligence, and convert observer's requests for fire into commands to the firing squads. The efficiency and speed of execution of fire missions depend on the skill of the men in the use of fire direction techniques and equipment. The chief fire direction computer supervises the activity of the FDC.

c. Davy Crockett FD computations may be made at the weapon site by members of the Davy Crockett squad or by the platoon fire direction center.

d. Mortar fire direction procedures are explained in detail in FM 23–92.

e. The platoon FDC monitors the supporting artillery FD net. To insure adequate coverage of targets and to avoid duplication of effort, the battalion FSC integrates the fires of the platoon and the supporting artillery.

12. Fire Support Planning

a. General. The general principles governing coordination of fire support described for higher command levels are applicable within the battalion.

b. Mortar Fires.

(1) *Responsibility and control* The platoon leader is responsible for planning, coordinating, preparing, and delivering all fires by his platoon. He gives priority to calls from his parent battalion, however, his platoon may, upon approval of the battalion commander, fire on call of division artillery or adjacent units when such firing will not interfere with firing in support of the battalion.

(2) *Charactertistics of mortar.* The mortar has certain characteristics that must be considered in fire planning:

(*a*) High rate of fire for short periods.

(*b*) Ability to fire from deep defilade.

(*c*) Steep angle of all resulting in a large lethal area.

(*d*) Capability of employment close to mask for protection against enemy fire and observation.

(*e*) Relatively large dispersion pattern.

(*f*) Limited maximum and minimum range capability.

(*g*) Displacement capability and limitations.

c. Mortar Fire Planning.

(1) Fire planning involves the following principles:

(*a*) Close and continuous support of the attacking or defending troops.

(*b*) Maximum prearrangement of fires.

(*c*) Cooperation with adjacent units.

(*d*) Continuous planning.

(2) The detail in which fire plans are made depends on the time available for planning, the extent and accuracy of target locations, the type of operation in which the supported unit or force is engaged, and the requirements of the fire support plan of the higher echelon. Fire planning for a specific operation begins at each level with the commander announcing his concept of fire support. At battalion level, the fire plan is based primarily on requests from company teams, battalion headquarters, and those generated from acquired targets. Coordination of heavy mortar and artillery fires is effected simultaneously at the battalion CP and at the supporting artillery FDC. The result is one fire plan containing all requisite information such as graphic layout, target lists, and schedule of fire.

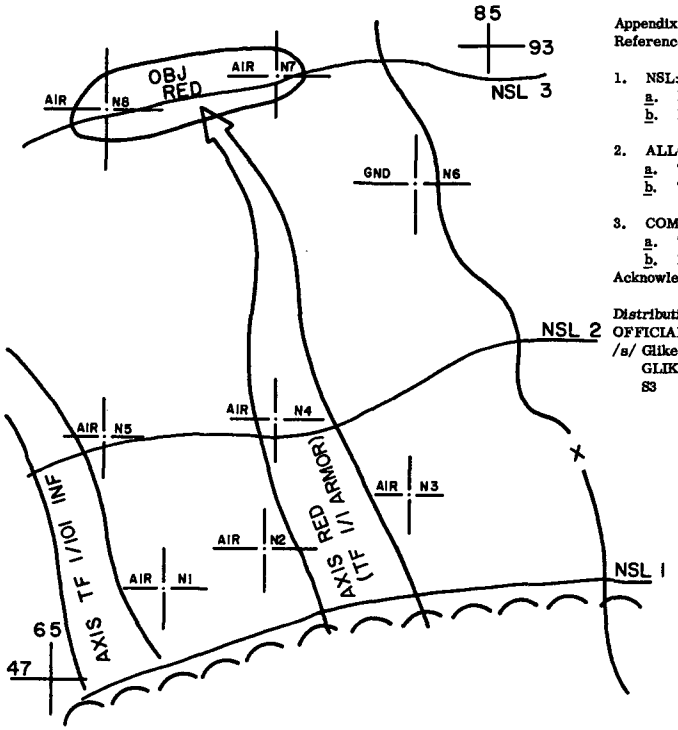
(3) To facilitate the compilation of planned fires, it may be desirable to arrange concentrations into groups, series, or schedules of fires. A system of numbers and letter prefixed should be used.

(4) The fire capability of the platoon is the aggregate of the fire capabilities of its squads. The fire capabilities chart should show the area that can be covered by each section.

d. Davy Crockett Fire Planning.

(1) The battalion commander is responsible for the planning and coordination of Davy Crockett fires. Based on the guidance of the commander, the section leader performs detailed fire planning for those squads employed in general support.

(2) When time permits the Davy Crockett fire plan is submitted in the form of an overlay and becomes an appendix to the battalion fire support annex of the operation order (fig. 80). As a minimum, a target list is sub-



CLASSIFICATION

Appendix 2 (Davy Crockett Fire Plan) to Annex B (Fire Support Plan) to OPORD 3
Reference: Map, UNITED STATES, 1:50,000, FORT MEADE, LAMPASAS

COPY No. 3
1/1 Armor
FORT MEADE, TEXAS
091700 Nov ___
GK 032

1. NSL:
   a. NSL 1 effective immediately.
   b. NSL 2 & 3 effective on order.

2. ALLOCATION:
   a. TM A: 2 nuclear.
   b. TM B: 2 nuclear.

3. COMMANDER'S GUIDANCE:
   a. Troop safety: neg risk to unwarned exposed pers.
   b. 1/3 target coverage is mandatory.

Acknowledge.

Distribution: A
OFFICIAL:
/s/ Glikes
GLIKES
S3

SHOTT
Lt Col

SCHEDULED FIRES							
TGT NO.	DESCRIPTION	TIME	SQUAD	HOB	DGZ	ESTIMATED CASUALTIES	CONDITION OF TARGET AREA AFTER BURST
N1		100443	1	AIR	693502	1/3 to 1/2	BRUSH FIRES NO OBS
N2		100444	3	AIR	711593	1/2	BRUSH FIRES NO OBS
N3		100445	4	AIR	801613	TROOPS IN AREA	NO OBSTACLE
ON CALL FIRES							
N4	PREPARED BLOCK POS	ON CALL		AIR	823764	NEUTRALIZATION	SOME FIRES
N5	PREPARED POS	ON CALL		AIR	682798	NEUTRALIZATION	NO OBSTACLE
N6	REGT COMMAND POST	ON CALL		GND	783826	DESTRUCTION	FIRES, NO OBSTACLE
N7	PREPARED POS	ON CALL		AIR	798901		NO OBSTACLE
N8	PREPARED POS	ON CALL		AIR	736883		NO OBSTACLE

CLASSIFICATION

Figure 80. Davy Crockett fire plan.

mitted to the commander for coordination with other fire support units.

(3) Preplanned fires are coordinated by the battalion FSC as directed by the commander. As the platoon leader has direct communication with the Davy Crockett section, he normally assists in this function.

(4) Davy Crockett squads use the common numbering system for concentrations as prescribed in the unit SOP.

(5) Fire planning is continuous. Fires are planned on likely avenues of approach, assembly areas, weapons positions, defiles and obstacles.

(6) There are no specific rules for selection of remunerative Davy Crockett targets. Targets are considered in their relationship to the commander's plan, other fire support means available, size and type of target, effects desired, and availability of ammunition. Generally, targets are selected that are vulnerable to the effects of the weapon and whose destruction or neutralization are critical to the commander's plan.

e. Company Team Fire Planning. The company team commanders, through the mortar and artillery forward observers, request the organic and nonorganic fire support desired. As a preliminary to formulating this request, the forward observer informs the supported commander of the capabilities of the fire support available and obtains from him the following information:

(1) Present location of forward elements.

(2) Plan of attack or defense.

(3) Known enemy locations, including probable avenues of approach, assembly areas, and weapons positions.

(4) Protective fires desired.

(5) Location of the company command post.

f. Processing Fire Plans.

(1) Both the mortar and artillery forward observers send the company commander's fire requests to their respective FDC for consolidation and coordination. Mortar fires are integrated into the artillery fire plan by the fire support coordinator.

(2) The company plans of fire support and the requirements from the battalion commander are integrated into the battalion fire support plan. This plan is prepared under the supervision of the FSC or his designated representative (normally the liaison officer from the artillery bat-

talion in direct support of the brigade) and submitted to the battalion commander for approval.

13. Classification of Fires

a. General. Mortar and Davy Crockett fires are classified according to type (effects desired), prearranged fires, fires not prearranged (fires on targets of opportunity), and observed and unobserved fires.

b. Types of Fires.

(1) *Destruction.* Fires delivered for the purpose of destroying material objects. Destruction fires may be accomplished by penetration, blast effect, incendiary action, or by a combination of these actions.

(2) *Neutralization.* Fires delivered to screen; cause casualties; hamper and interrupt the firing of weapons, movement, or action; and to reduce the combat efficiency of enemy troops.

(3) *Harassing.* Fires of less intensity than neutralization, designed to inflict losses or, by the threat of losses, to disturb the rest of enemy troops, curtail movement, and, in general, to lower morale.

(4) *Interdiction.* Fires placed on an area or point to prevent or hinder its use. Interdiction fire is usually of less intensity than neutralization fire.

c. Prearranged Fires. Prearranged fires are those for which data have been prepared in advance. They may be prearranged as to both time and place (scheduled fires) or they may be prearranged as to location only and fired on request (on-call fires).

(1) *Scheduled fires.* Prearranged fires delivered at a specific time during the maneuver or operation of the supported force. Time is specified in terms of before or after H-hour or on accomplishment of a predetermined movement or task.

(2) *On-call fires.* Prearranged fires fired as requested. These fires may have fire data prepared or may be planned as to location only.

(3) *Preparation.* Intense fire delivered in support of an attack. It is designed to disrupt the enemy's communications, disorganize his defenses, and neutralize his fire support means. Preparations begin before, at, or after H-hour and continue until lifted. They may be lifted at a prearranged time or on request.

(4) *Counterpreparation fire.* A system of intensive fires delivered when imminence of the enemy attack is discovered. It is designed to break up enemy formations; disorganize the enemy's system of command, communication, and observation; decrease the effectiveness of his artillery preparation; and impair his offensive spirit.

(5) *Concentration.* A volume of fire placed on an area within a limited time, or an area designated and numbered for future reference as a possible target. All fires except registration fire and barrages are termed concentrations and may be prearranged fires or fires on targets of opportunity. The actual area covered by any concentration depends on the nature of the target to be engaged.

(6) *Barrage.* A planned barrier of fire to protect troops and installations by impeding enemy movement across defensive lines or areas. The mortar section normally fires one joint barrage approximately 140–180 meters wide. The Davy Crockett weapons are not assigned barrages. The general location of the barrage is designated by the battalion commander. The exact location of the barrage is selected by the company commander in whose area it is to be located. These barrages are an integral part of the final protective fires. They are usually planned close-in to friendly positions to cover dangerous avenues of approach. Some factors that influence the distance of barrages from forward troops are:

(*a*) Range from mortar to barrage location.

(*b*) Inability to survey-in mortars or to register.

(*c*) Conditions that result in decreased accuracy of fires (e.g., worn weapons, changing weather conditions and the state of training of the crew).

(*d*) The degree to which friendly troops are dug-in and protected by overhead cover.

(*e*) The presence of terrain features that might increase fragmentation effect or decrease accuracy (woods or steep slopes).

d. Fires on Targets of Opportunity. Targets of opportunity are those targets located during the course of an action. They may be engaged at any time on request from anyone who can identify the target and adjust fire on it. If a target appears at a point for which no data have been prepared, it is engaged by adjustment following an estimation of the correction in range and devia-

tion from the nearest reference point or by determining its geographic location on a map.

e. Observed and Unobserved Fires. Fire is adjusted by observation whenever possible. Unobserved fires may be delivered on accurately located targets. The effectiveness of unobserved fire depends on accurate survey data and firing corrections.

14. Reconnaissance, Selection, and Occupation of Position

a. General. The purpose of reconnaissance, selection, and occupation of position (RSOP) is to facilitate rapid movement of mortars and Davy Crockett launchers into position, insure close and continuous indirect fire support and to provide flexibility of movement. The platoon leader must keep himself informed of the situation and anticipated future operations to effect timely RSOP. Selected position areas or routes are reported to the battalion S3 and FSC. The battalion mortar and DC platoon leaders coordinate the firing positions with the artillery liaison officer. Procedures to be followed by the platoon in the RSOP parallel those outlined in FM 6–140.

b. Reconnaissance.

(1) Position reconnaissance involves a search for locations for the various elements of the platoon, including firing positions, command posts, and observation posts. Mortar range limitations make it imperative that reconnaissance for new firing positions be continuous. Position-disclosing features of the backblast and enemy counterfire location of the Davy Crockett weapon by the distinctive trajectories of its piston and major caliber round will necessitate frequent shifting of position. In addition to the primary position, alternate and supplementary positions must habitually be reconnoitered and selected. If time permits, these positions, and the routes between them, are prepared. Reconnaissance parties should be limited to those men and vehicles actually required.

(2) Based on their knowledge of the weapon, section and squad leaders must be prepared to recommend position areas from which they can accomplish the desired fire support. Continuous reconnaissance is necessary to locate good positions. Davy Crockett squad leaders pick the exact location of the weapon within the area designated by the section leader or the supported unit commander. The Davy Crockett squad leader requests authority from the platoon leader to displace to an alternate

position when the primary position becomes untenable due to enemy fire.

c. Selection. It is desirable to select position areas that provide concealment and defilade, sufficient space for dispersion, and terrain adaptable for defense of the unit. The primary requirement of a position area is that it permit accomplishment of the mission.

(1) The high angle firing characteristics of the mortar permit wider selection of positions than is normally considered for artillery weapons. Mortars can be positioned in small openings in woods and close to the base of hills or bluffs; ravines may also be used. These ground formations offer some protection from enemy observation or detection and from weapons other than high angle types. Desirable characteristics of mortar positions include:

(*a*) Dry, well-drained ground, free from large stones and other obstructions.

(*b*) Availability of alternate positions.

(*c*) Location within or near reserve units when such location would not interfere with the mission of either unit.

(2) Desirable features of a good Davy Crockett position include:

(*a*) Mask clearance.

(*b*) Routes to rear and flanks for rapid shifting of positions.

(*c*) Free of materials contributing to the backblast cloud.

(*d*) Provisions for security.

(*e*) Hard standing nearby for the vehicle. Desirably, the squad armored personnel carrier is placed on the flank of the weapon to be used as a position for the crew during firing of the major caliber round and to furnish protection from artillery and mortar fires.

d. Occupation. When selecting a position, the platoon leader must plan for occupying the area selected, including location of the weapons, vehicle park, wire routes, and routes into the position. Once he forms his plan, he must issue orders for implementation to include communication and security. Because Davy Crockett sites will be prime targets for enemy weapons, special precautions may be required.

(1) Positions may be occupied only long enough to adjust fire onto targets, and the weapon and crew then move to a

covered and concealed area until a fire mission is requested. In open terrain the primary position may be selected but not occupied immediately if enemy air is active.

(2) In areas where terrain restricts movement and the weapon must remain in one position for an extended period, it may be necessary to construct a protective wall on each side of the weapon and dig emplacements for the ammunition and crew.

15. Displacement

To carry out its mission of close and continuous fire support, the platoon must displace promptly from one position to another. Planning for displacement and reconnaissance for new positions is continuous. Effective planning and reconnaissance reduce the time that mortar units are out of action during a displacement. The scheme of maneuver of the supported unit influences the time and method of displacement and the location of new positions. Units normally displace by vehicle. Under special conditions, it may be possible to displace by Army transport aerial vehicle.

16. Class V Supplies

a. General. Class V supplies as related to the battalion mortar and Davy Crockett platoon include nuclear and nonnuclear ammunition, pyrotechnics, antitank mines, and chemicals. The commander is responsible for the supply of ammunition to his platoon, except for elements attached to other units. In such cases, the commander of the unit to which they are attached is responsible for their ammunition supply.

b. Ammunition Loads. The basic load is that quantity of ammunition authorized to be carried on individuals and vehicles of a unit. Replenishment of basic loads to keep pace with expenditure of ammunition is a command responsibility. Only that ammunition necessary to meet anticipated needs is unloaded at positions; the remaining ammunition is kept mobile.

c. Ammunition Replenishment. Ammunition is replenished from the battalion trains as stocks are depleted. Unit distribution is used to deliver ammunition to firing positions when the platoon is employed under battalion control. When mortar squads are attached to company teams, the company team commander will supply ammunition directly to the firing positions.

Section II. TACTICAL EMPLOYMENT

17. General

Regardless of the type operation being conducted, the mortar and Davy Crockett platoon provides close and continuous fire support to its parent battalion. This section sets forth doctrine for the employment of the platoon in tactical operations.

18. Methods of Employment

a. Mortar Section.

(1) The mortar section is best employed as part of the platoon in general support of the parent battalion. This method affords maximum flexibility in that massed fires can be placed on targets throughout the battalion area of operations. A priority of fire may be assigned to a company team as required.

(2) One or more squads may be placed in direct support of, or attached to, the company teams when they cannot be employed in general support. When attached to a company team, the company team commander assumes complete control of and responsibility for the mortar section or squad.

b. Davy Crockett Section. The Davy Crockett section is employed as part of the platoon in the same general manner as prescribed for the mortar section, except that the section or squads will not be attached below battalion level.

(1) The section is best employed in general support of the battalion. This does not mean that the weapons must occupy the same firing position as the mortar squads. One or more Davy Crockett squads may be employed at a distance from the mortar position consistent with the range limitations of communication equipment. A Davy Crockett squad may be sent forward to a designated firing position from which the fire mission is conducted, and the squad displaces to a subsequent firing position or assembly area.

(2) Davy Crockett squads may be employed in direct support of company teams, when the section cannot accomplish its mission if retained in general support.

19. Marches

a. The mortar and Davy Crockett platoon conducts administrative and tactical marches applying the same principles and tech-

niques used by other armor units. (See FM 17–1 for a detailed consideration of march tactics for armor units.)

b. The platoon and its squads must be prepared to deploy from march column, lay, register, and fire missions with speed and accuracy.

c. Davy Crockett squads are positioned in the march column of their parent, or supported, unit to facilitate rapid engagement of targets that impede the forward movement of the organization. At least a part of the section is positioned well forward in the column, consistent with minimum range characteristics of the weapon system.

20. Assembly Areas

a. The battalion mortar and Davy Crockett platoon occupies an assembly area employing the same principles and techniques applicable to other armor units. (See FM 17–1 for the general considerations applicable to occupation of assembly areas.)

b. Mortars and Davy Crockett weapons are positioned to cover likely enemy avenues of approach into the parent organization or supported unit position. Fires are planned to the extent that time and situation permit.

21. Preparation for Attack

a. The battalion mortar and Davy Crockett platoon prepares for the offense by accomplishing the basic tasks incident to preparation for combat by any armor unit. The platoon will usually accomplish all administrative functions before movement from the assembly area. Weapons, vehicles, radios, and other equipment are checked; ammunition is stowed; troop leading is begun by section and squad leaders.

b. Initial firing positions are selected and plans are completed for their occupation and registration of weapons to support the attack. Positions are occupied at the latest practicable time before the attack to minimize detection by the enemy.

c. Fires are planned to support all phases of the attack. These fires are planned in as much detail as possible. When lack of information precludes detailed planning, leaders prepare general plans for providing fires to supported units, including selection of firing positions or the position within the attack formation if contact is not imminent, i.e., exploitation.

d. Additional considerations in employing Davy Crockett weapons are:

(1) Troop safety and warning.
(2) Induced radiation.
(3) Danger area from piston drop-off.

22. Conduct of the Attack

a. Fires are delivered in accordance with platoon, section, and squad fire plans. Scheduled fires are delivered at the time and on targets prescribed. Upon completion of scheduled concentrations, the platoon prepares to engage targets of opportunity and deliver on-call fires as requested by supported elements.

b. The platoon leader keeps himself informed of the situation and continues his estimate. Alternate firing positions are occupied when hostile fire makes the primary positions untenable. Supplementary positions are occupied should it become necessary to meet enemy counterattacks from any direction.

c. Mortars and Davy Crockett weapons displace before the time supported elements move beyond effective range of the weapon. As a general rule, the platoon or its squads should begin displacement when supported units reach distances equivalent to one-half the range of the primary weapons. Displacement of the mortars is usually as a section. The Davy Crockett squads and, when required to insure continuous fire, the mortar squads displace by squads as the requirement for fire support and the tempo of the operation dictate. When mortar squads are attached to companies, the commander of the company to which attached will direct the squad leaders to displace. In fast moving attacks and movement to contact, the mortar and Davy Crockett platoon, or one or more squads, must deploy from march column and fire missions as requests are received.

23. Exploitation and Pursuit

The mortar and Davy Crockett platoon fires are effective in exploitation and pursuit operations as they can be employed against enemy targets with minimum delay and coordination in comparison with other fire support means.

24. Night Attacks

The mortar and Davy Crockett platoon is employed at night to provide fire support, including illumination. An important factor that must be considered before employment of Davy Crockett fires at night is the attendant dazzle or flash blindness occurring among troops exposed to a nuclear explosion during darkness.

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25. Defense

a. Regardless of whether the parent organization is conducting an area defense or is participating as part of a large force in a mobile defense, the battalion mortar and Davy Crockett platoon applies the same general principles in providing fire support.

b. The platoon is employed using the method that best provides the fire support needed by battalion elements. Where possible, the platoon is employed in general support to provide for maximum flexibility; however, squads may be placed in direct support of companies, as required.

c. Fire planning in the defense is similar to that described for offensive situations. Fires are planned as:

(1) Long range fires (concentrations) to bring the enemy under fire, deceive him as to location of the battle position, and inflict casualties.

(2) Close defensive fires (concentrations) to prevent the enemy from reaching a position from which he can launch his assault.

(3) Final protective fires. The mortar and Davy Crockett sections participate in the final protective fires of the battalion. These fires are assigned to the mortar section as 1 barrage on which all 4 squads fire jointly. For the Davy Crockett section, the final protective fires will consist of a single priority concentration assigned to each squad and which is to be fired on call.

(4) Fires (concentrations) within the battle position that can limit enemy penetration and support counterattacking elements.

d. When the parent organization is part of the striking force, or all or part of the reserve, fires are planned as described for offensive operations. Fire plans are prepared that support the counterattack plans. Davy Crockett concentrations are useful for the support of the striking force because their effects can usually be limited to areas in which the fire support is required.

e. During conduct of the defense, fires are delivered on prearranged concentrations and targets of opportunity as requested by supported commanders. Because of troop safety considerations associated with nuclear fires, the majority of Davy Crockett concentrations are usually placed on targets in the mid-ranges.

f. Alternate and supplementary positions are designated by the platoon leader or commander of the unit to which mortar squads are attached. Squads move to alternate positions when hostile fire

threatens primary positions; supplementary positions are occupied as necessary.

26. Retrograde

a. General. The battalion mortar and Davy Crockett platoon is employed in retrograde operations applying techniques similar to those used in the defense.

b. Retirement. The platoon will move as part of its parent organization when it participates in a retirement. The mortar section and Davy Crockett squads are interspersed within the column to facilitate rapid deployment into firing positions and to provide fire support to all elements of the battalion.

c. Withdrawal. The platoon provides fire support for its parent battalion throughout all phases of the withdrawal. As the main body withdraws, one or more mortar squads are attached to the security elements. The remainder of the platoon withdraws under control of the platoon leader or commander of the unit to which attached. Additional security measures must be taken to prevent weapons left with the security elements from falling into enemy hands.

d. Delaying Action. The platoon fires are planned in support of delaying actions. Squads may be placed in direct support of companies because of the relatively wide frontages incident to delaying actions. Fires are planned to subject the enemy to attack at maximum ranges and targets of opportunity are engaged as they are detected. Use of aerial observers permits full use of the range characteristics of the mortars and Davy Crockett weapons.

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BY ORDER OF THE SECRETARY OF THE ARMY:

G. H. DECKER,
General, United States Army,
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17–66 (25)

NG: State AG (3); Units—same as Active Army except allowance is three copies to each unit.

USAR: Same as Active Army.

(All units shown in formula except Armor Gp, TOE 17–17, 17–25, 17–26, 17–27, 17–65, 17–66 are applicable to divisional units only.)

For explanation of abbreviations used, see AR 320–50.

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